The Bean Bag

A newsletter to promote communication among research scientists concerned with the systematics of the Leguminosae/Fabaceae

Number 49 February 2002

From the Editor

Barbara Mackinder

The Bean Bag is designed to promote communication among research scientists concerned with legume systematics. To achieve this goal *The Bean Bag* is issued annually. As of this volume, *The Bean Bag* will be issued in February each year. The change of month (from November) will allow for a more appropriate timing of certain regular announcements (e.g. The Rupert Barneby Award) and will avoid postal difficulties commonly associated with the Christmas period. *The Bean* Bag features six columns: From the Editor, News (meetings, major events, announcements, etc.), Latin American Legume Report, Nodulation and Nitrogen Fixation (new nodulation records), Gleanings, and Recent Legume Literature. Data in the Gleanings column are derived from questionnaire sheets which Readers complete and return.

The Recent Legume Literature column contains published research papers of specific interest to *Bean Bag* Readers and is derived from Readers contributions in conjunction with references from The Kew Record of Taxonomic Literature. Recent is defined as up to 18 months old. Specific interest to *Bean Bag* Readers is defined as research papers of interest to a worldwide group of legume systematic botanists.

Bean Bag Readers are encouraged to send notices, observations, etc. In particular in this issue, information is solicited concerning any aspect of nodulation (see the contribution from Janet Sprent under News). Also included is an inventory of legume taxa as yet unsampled for molecular phylogenetic studies (see the contribution from Gwilym Lewis and Brian Schrire under News). Furthermore a list of legume genera whose response to rhizobia is unknown is included with the intention of encouraging their exploration (see the contribution from Harold Corby and Joe Kirkbride under Nodulation and Nitrogen Fixation).

We encourage readers to accept delivery of *The Bean Bag* via e-mail to reduce our ever increasing distribution costs thus ensuring the continuation of *The Bean Bag*. If you are able to accept your copies by e-mail, please send a message to the editor (email: **b.mackinder@rbgkew.org.uk**). Will new readers please provide their title, first and last names, full postal address and area(s) of interest.

Electronic copies of the current and past issues of Bean Bag and the Current Readers Directory can be viewed on the World Wide Web server of the Royal Botanic Gardens, Kew, UK at
http://www.rbgkew.org.uk/herbarium/legumes/beanbag.html

Bean Bag address:
Mrs B. Mackinder, Bean Bag Editor, Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, United Kingdom
email: b.mackinder@rbgkew.org.uk

NEWS

The Fourth International Legume Conference, July 2001, Canberra, Australia

Joe Miller

The Fourth International Legume Conference, "Legumes Down Under", was held in Canberra during the first week of July 2001. There were over 100 participants at the conference with people from all over the world. The organisers were very pleased that there were very few logistical or technical problems and that the weather was cooperative. It was very useful time for legume workers to get together and to continue the work on legume phylogeny and other topics.

The conference had a strong focus on Systematics with other sessions on Phytochemistry, Utilization, Electronic and Web Based Tools, Symbiosis and Rehabilitation, Developmental and Structural Morphology and Legume/Animal Interactions.

Currently manuscripts, taken from papers given at the conference, are being reviewed for two publications of the Advances in Legume Systematics series. One volume (Advances X) will be published at The Royal Botanic Gardens, Kew and focuses on higher-level systematic studies. The second volume (Advances XI) will be published by CSIRO Publishing, will also be labeled as a special issue of Australian Systematic Botany and focuses on *Acacia* systematics and utilization.

Over a dozen participants also attended a post-conference symposium in Western Australia entitled "The Conservation and Utilization Potential of Dryland Acacias." A volume of papers from this symposium is also being prepared.

Several collaborative projects were discussed involving the Bean Tree Workshop and ILDIS. It is hoped that the conference has facilitated and reinforced cooperation and transfer of knowledge among legume workers and that this work will continue.

On behalf of the conference organizing committee Joe Miller would like to thank all the participants for visiting Canberra. We would also like to thank our many sponsors of the conference. We look forward to the next International Legume Conference and associated legume symposia at various meetings to continue our important work in legume research.

Organizing Committee: Joe Miller, Mike Crisp, Jim Grimes and David Morrison.

Nodulation in Legumes - not the end of the story!

Janet I. Sprent

Book Announcement

Janet Sprent's new book summarises the processes leading to nodulation in legumes and also the current list of those species known to nodulate. The last entry was made in March 2001, but there is already new information available. Two new genera of bacteria capable of nodulating legumes have been reported as well as another slant on the infection process. Much of the new information emerging is from the tropics and this is likely to be only the tip of the iceberg!
Please let Janet (jisprent@aol.com) know of any new material that you have, on any aspect of nodulation, so that it can be incorporated in an up-date of the book which is already planned.

Nodulation in Legumes by Janet I. Sprent (xii + 146pp. Soft cover, ISBN 1 84246 013 7) is published by The Royal Botanic Gardens, Kew, price £27.00 / €43.20 and can be purchased from http://www.Kewbooks.com and in the near future (expected April 2002) directly from RBG, Kew at http://www.kew.org/publications.

Nitrogen Fixation Conference

If you are working on nodulation in a developing country and would like to be considered for funding to attend the next European Conference on Nitrogen Fixation, to be held in Norwich, England Sept 6-10 2002, please email jisprent@aol.com with an indication of what you are doing and a brief CV.
A limited amount of funding has been obtained from the EU and it will be distributed competitively with a preference for young (post MSc or PhD) researchers.

The Leguminosae of Madagascar

Barbara Mackinder

The Leguminosae of Madagascar, edited by David J. Du Puy is the product of a project that originally aimed to produce a checklist of the Leguminosae of Madagascar. However it quickly became clear that the knowledge of the family in Madagascar was very incomplete and that a full flora account and fieldwork would be needed.
Jean-Noel Labat, Jean Bosser and Jean-François Villiers from Paris collaborated on the book, as did Raymond Rabevohitra from Madagascar. Sadly J.-F. Villiers died before completion of the book.
The book deals with 573 native species of which 80% are endemic to Madagascar. Six genera and 129 species were described as new to science during the project. The book is generously illustrated with line drawings and colour photographs.
The Leguminosae of Madagascar, (720 pp. Hardcover, ISBN 1 900347 70 9) is published by The Royal Botanic Gardens, Kew. It can be purchased from http://www.Kewbooks.com and in the near future (expected April 2002) directly from RBG, Kew at http://www.kew.org/publications.for £65.00 / €104.00 plus post/packaging.

Molecular sampling needs in Leguminosae

Gwilym P. Lewis and Brian D. Schrire

At a recent UK Legume group meeting, it was agreed that we should compile a list of genera that have not yet been sampled molecularly. In consultation with Marty Wojciechowski, Matt Lavin, Toby Pennington, Melissa Luckow and Pat Herendeen, we present below a list of critical genera (Table 1) for which no known molecular data is currently available.

If you are in a position to collect silica-dried leaf material of any of these genera (i.e. you have in place collecting permits for those areas where these genera are known to grow), please let Gwil Lewis or Brian Schrire at RBG, Kew know and they can put you in touch with the relevant specialist seeking to access this material. Alternatively, if you have already extracted DNA from any of these genera kindly also let us know so we can keep the list below updated. The overall aim of targeting these critical genera is to have available at least one species of each of the 720 genera of legumes, thus moving closer towards a full molecular legume phylogeny. We envisage this as Phase 1 of a legume gap-filling exercise, to be followed by a more detailed list including those paraphyletic or large genera where more detailed sampling is necessary. We present such a list for the Caesalpinioideae and tribe Mimoseae in Table 2 below.

Contact e-mails: G.Lewis@rbgkew.org.uk or B.Schrire@rbgkew.org.uk

Table 1. Genera for which no known molecular data is currently available

Genus	Tribe	Sp #	Distribution
CAESALPINIOIDEAE			
Arcoa	Caesalpineae	1	Haiti (Santo Domingo)
Balsamocarpon	Caesalpineae.	1	Chile
Chidlowia	Caesalpineae.	1	Sierra Leone, Ghana, Ivory Coast, Liberia
Moullava (=*Wagatea*)	Caesalpineae.	1	India
Neoapaloxylon	Caesalpineae.	1	Madagascar
Orphanodendron	Caesalpineae.	1	Colombia
Stenodrepanum	Caesalpineae.	1	Argentina
Stachyothyrsus	Caesalpineae.	3	Cameroon, Sierra Leone, Ivory Coast, Liberia, Zaire, Equatorial Guinea
Sympetalandra	Caesalpineae.	5	Indonesia & Malaysia (Sabah, Sarawak, Kalimantan, Malay Peninsula, Sumatra)
Adenolobus	Cercidieae	3	Namibia, S. Africa, Botswana
Gigasiphon	Cercidieae	3	Madagascar, Tanzania, Kenya, Angola, Gabon, Zaire
Griffonia	Cercidieae	4	Cameroon, Gabon, Nigeria, Zaire
Androcalymma	Cassieae	1	Brazil
Apuleia	Cassieae	1	Brazil, Colombia, Peru, Venezuela, Argentina
Eligmocarpus	Cassieae	1	Madagascar
Kalappia	Cassieae	1	Indonesia (Sulawesi) near Milili

Genus	Tribe	Sp #	Distribution
Mendoravia	Cassieae	1	Madagascar (southeast)
Brandzeia (=*Bathiaea*)	Detarieae. s.l	1	Madagascar (southeast)
Brachycylix	Detarieae s.l	1	Colombia
Brenaniodendron	Detarieae s.l	1	Mozambique
Brodriguesia	Detarieae s.l	1	Brazil (Bahia)
Hardwickia	Detarieae s.l	1	west India
Heterostemon	Detarieae s.l	7	Guyana, Brazil (Amazonas, Para), Surinam, Colombia, Venezuela
Lebruniodendron	Detarieae s.l	1	Cameroon, Zaire
Leucostegane	Detarieae s.l	2	Malaysia & Indonesia (Malay Peninsula, Sumatra, Sarawak)
Michelsonia	Detarieae s.l	1	Zaire
Neoapaloxylon	Detarieae s.l	3	Madagascar (west and south)
Pseudomacrolobium	Detarieae s.l	1	Zaire
Paloveopsis	Detarieae s.l	1	Guyana, Brazil (Amazonas)
MIMOSOIDEAE			
Aubrevillea	Mimoseae	2	Guineo-Congolian
Indopiptadenia	Mimoseae	1	India & Nepal
Lemurodendron	Mimoseae	1	Madagascar
Mimozyganthus	Mimoseae	1	Argentina
Prosopidastrum	Mimoseae	2	Baja, California & Argentina
Xerocladia	Mimoseae	1	South Africa, Namibia
Stryphnodendron	Mimoseae	c.30	Central America, northern South America and Brazil
Abarema	Ingeae	44	Mainly New World tropics, 1 sp. extending to Bahamas, 2 to SE Brazil
Archidendron	Ingeae	94	Sri Lanka, continental SE Asia, Malesia, NE Australia, 1 sp extending to Micronesia, 2 to Solomon Islands
Archidendropsis	Ingeae	14	New Guinea, Bismark Archipelago, Australia (Queensland), New Caledonia, Solomon Islands
Blanchetiodendron	Ingeae	1	E Brazil
Cathormion	Ingeae	1	SE Asia & Australia
Cojoba	Ingeae	12	West Indies, NW Andean and tras-Andean South America, SE Mexico & Central America
Ebenopsis	Ingeae	3	Mexico & S Texas
Falcataria	Ingeae	3	Moluccas, New Guinea, Solomon Islands, Australia (Queensland)
Guinetia	Ingeae	1	Mexico
Havardia	Ingeae	5	Mexico, Texas & C America
Hesperalbizia	Ingeae	1	SW Mexico
Hydrochorea	Ingeae	3–4	Orinoco & Amazon basins, Guianas, Brazil
Leucochloron	Ingeae	4	Brazil
Macrosamanea	Ingeae	11	South America, mostly Amazonian
Painteria	Ingeae	3	Mexico
Serianthes	Ingeae	c.18	Thailand, Malesia, Micronesia, Melanesia & W. Polynesia
Sphinga	Ingeae	3	Mexico, Cuba, Guatemala, & NW South America
Viguieranthus	Ingeae	23	Asia & Madagascar
Wallaceodendron	Ingeae	1	N Celebes & Philippines
Zygia	Ingeae	c.60	Lowland tropical America and Greater Antilles to South America, most diverse in Central America, Columbia, Guianas, & NW Amazonia
PAPILIONOIDEAE			**Genera arranged systematically within tribes**
Candolleodendron	Swartzieae	1	S America (French Guiana, N and NE Brazil)
Haplormosia	Sophoreae	1	W and C Africa (Sierra Leone to Gabon)
Uleanthus	Sophoreae	1	S America (Amazonian Brazil)
Panurea	Sophoreae	2	S America (Colombia and Brazil)

Helen → I
Helen ?

See e-mail of May 29

Genus	Tribe	Sp #	Distribution
Diplotropis	Sophoreae	12	S America, (Colombia and Venezuela to Peru and Bolivia)
Spirotropis Helen I.	Sophoreae	2-3	Northern S America (Venezuela, Guyana, Surinam & French Guiana)
Monopteryx	Sophoreae	3-4	Northern S America (Colombia, Venezuela, French Guiana and Amazonian Brazil)
Petaladenium	Sophoreae	1	Brazil (Rio Negro river)
Sakoanala	Sophoreae	2	Madagascar
Neoharmsia Helen I.	Sophoreae	2	N and NW Madagascar
Ammothamnus	Sophoreae	3	Central Asia (Kazakstan, Tadzhikistan, Uzbekistan and Turkmenistan)
Amphimas	Sophoreae	3-4	C and W Africa
Baphiastrum	Sophoreae	1	Tropical central Africa
Ammopiptanthus	Thermop-sidae	1-2	Mongolia. China, Russia
Xiphotheca	Podalyriae	9	Africa (endemic to the Cape region of South Africa)
Amphithalea	Podalyriae	42	Africa (endemic to the Cape region of South Africa)
Pearsonia	Crotalarieae	13	Africa and Madagascar
Rothia	Crotalarieae	2	Africa and Asia to Australia
Robynsiophyton	Crotalarieae	1	SC Africa (Angola, Zambia and Zaire)
Spartidium	Crotalarieae	1	N Africa (Morocco to Libya)
Bolusia	Crotalarieae	5	SC and southern Africa
Wiborgia	Crotalarieae	10	Africa (endemic to the Cape region of South Africa)
Polhillia	Genisteae	7	W and SW parts of the Cape region of South Africa
Sellocharis	Genisteae	1	S America (SE Brazil)
Anarthrophyllum	Genisteae	15	S America (Andes in Argentina and Chile)
Hesperolaburnum	Genisteae	1	Morocco (Anti Atlas Mts.)
?Cytisophyllum	Genisteae	1	Mediterranean area of S Europe from Spain to Italy
Cytisopsis	Loteae	1-2	Mediterranean (E Mediterranean and N Africa)
Antopetitia	Loteae	1	Tropical Africa (mountains)
Oreophysa	Galegeae	1	N. Iran, mountains
Eremosparton	Galegeae	3	SE Russia and Caucasus to C Asia and NW China
Calophaca	Galegeae	5	Central Asia, Ukraine to Caucasus
Chesneya	Galegeae	c.30	Temperate SW Asia to Sino-Himalayan region, most diverse in C Asia to Mongolia
Neodielsia (*Astragalus* segr.)	Galegeae	?	Turkestan
Smirnowia	Galegeae	1	Afganistan, Iran, Turkestan
Gueldenstaedtia	Galegeae	c. 10	Sino-Himalayan region to Mongolia and Siberia
Stracheya	Hedysareae	1	High Himalayas (Kashmir, Tibet, etca)
Taverniera	Hedysareae	10	W India to Middle East, Horn of Africa
Sartoria	Hedysareae	1	S Turkey
Ebenus	Hedysareae	20	Mediterranean
Eversmannia	Hedysareae	1	Iran to W China
Vavilova	Fabeae	1	Turkey, Middle East
Parochetus	Trifolieae	2	Mtns. of tropical East Africa and Himalayas (no sampling from natural collections)
Endosamara	Millettieae	1	Indian subcontinent, Indo-China and Malasia
Sarcodum	Millettieae	c.3	S. China, Indo-China, Malesia, Papuasia
Burkilliodendron	Millettieae	1	Malaya (Perak)
Craspedolobium	Millettieae	1	S and SW China, Indo-China (Burma, Thailand, Laos)
Kunstleria	Millettieae	8	Malesia and Indian subcontinent (1 sp.)
Schefflerodendron	Millettieae	4	West-Central Tropical Africa with 1 sp. to East Africa
Disynstemon	Millettieae	1	Madagascar (South West)
Pyranthus	Millettieae	6	W, S and C Madagascar
Sylvichadsia	Millettieae	4	E and N Madagascar

Genus	Tribe	Sp #	Distribution
Paratephrosia	Millettieae	1	Australia (W. Australia, N. Territory, S. Australia, Queensland)
Ptycholobium	Millettieae	3	W to NE Tropical Africa and Arabia; southern Africa
Requienia	Millettieae	3	W to NE Tropical Africa (Sahelian zone); southern Africa
Platysepalum	Millettieae	7-8	Tropical, mostly West Africa
Antheroporum	Millettieae	c.3	SW China and Indo-China (Burma, Thailand and Vietnam)
?Imbralyx	Millettieae	c.4	S China to Sumatra (segregate of *Fordia*)
Behaimia	Millettieae	I	Cuba
Bergeronia	Millettieae	1	Brazil, Bolivia, Paraguay and Argentina
Dahlstedtia	Millettieae	2	Brazil, Argentina
Margaritolobium	Millettieae	1	Venezuela
Meizotropis	Phaseoleae	2	tropical Asia (subcontinental India and W Indo-China)
Cochlianthus	Phaseoleae	2	W China (Yunnan, Sichuan) and Himalayas (Nepal)
Cruddasia	Phaseoleae	c.2	NE Indian subcontinent; Indo-China (Burma, Thailand)
Pseudoeriosema	Phaseoleae	c.4	tropical Africa
Barbieria	Phaseoleae	1	Neotropics, from S Mexico, C America, Caribbean and W tropical S America
Clitoriopsis	Phaseoleae	1	tropical Africa (Congo [Kinshasa] and Sudan)
Macropsychanthus	Phaseoleae	c.2	Papuasia, Micronesia (possibly Philippines)
?Luzonia	Phaseoleae	1	Philippines (Luzon and Leyte)
Herpyza	Phaseoleae	1	Cuba (Allen & Allen, 1981 also note its occurrence in Puerto Rico)
Diphyllarium	Phaseoleae	1	Indo-China (Laos & Vietnam)
Sinodolichos	Phaseoleae	2	SE Asia (NE Indian subcontinent, SW China, Indo-China)
Nogra	Phaseoleae	c.3	Indian subcontinent, S China, Indo-China (all 3 spp. should be sampled)
Dysolobium	Phaseoleae	4	SE Asia (E Indian subcontinent, Indo-China, SW China, Malesia)
Alistilis	Phaseoleae	3	Southern Africa (1 sp.), Madagascar (2 spp.)
Nesphostylis	Phaseoleae	4	tropical and subtropical Africa (2 spp.); SE Asia (Indian subcontinent, Indo-China [Burma]; 2 spp.)
Decorsea	Phaseoleae	6	Southern tropical and subtropical Africa (3 spp.) and Madagascar (3 spp.)
Spathionema	Phaseoleae	1	E tropical Africa
Vatovaea	Phaseoleae	1	NE tropical Africa
Dunbaria	Phaseoleae	20	SE Asia (Indian subcontinent, Indo-China, China, E Asia, Malesia, Papuasia); N Australia
Bolusafra	Phaseoleae	1	South Africa (W Cape)
Flemingia	Phaseoleae	30-35	SE Asia (Indian subcontinent, Indo-China, China, Malesia, Papuasia) to Australia (ca 28-33 spp.); Africa 1 sp. and *F. grahamiana* Wight and Arn. widespread in Africa and Asia
Paracalyx	Phaseoleae	6	NE tropical Africa (Ethiopia, Somalia) and Socotra (5 spp.); Indian subcontinent, Indo-China (1 sp.)
Carissoa	Phaseoleae	1	SW tropical Africa (Angola)
Chrysocias	Phaseoleae	3- 4	South Africa (S parts of W Cape)
Orbexilum	Psoraleeae	8	E USA from Virginia to Florida, westwards through Kansas, Oklahoma and Texas; Mexico (to Chiapas)
Hoita	Psoraleeae	3	W USA (California) to NW Mexico (Baja California)
Pediomelum	Psoraleeae	21	SC Canada, USA (Great Plains and Great Basin) to C Mexico

Table 2: Genera for which additional species are needed

CAESALPINIOIDEAE			
Genus	**Tribe**	**Sp #**	**Distribution**
Caesalpinia s.l.	Caesal.	c.100	pantropical
Mezoneuron	Caesal.	c.30	Malaysia & Indonesia (Malay Peninsula, Java, Sumatra, Sarawak, Kalimantan, Celebes), Thailand, trop Africa, Hawaii
Tachigali s. l.	Caesal.	60	C & S. America
Dimorphandra	Caesal.	25	Guyana, Surinam, Brazil (Amazonas, Para, Rio de Janeiro), Venezuela, Colombia
Gleditsia	Caesal.	14	Indonesia (Celebes)
Bauhinia	Cercid.	c.250	pantropical
Cassia	Cassieae	30	pantropical
Dialium	Cassieae	c.40	pantropical
Labichea	Cassieae	18	Australia (Queensland, W. Austr.)
Martiodendron	Cassieae	4	Brazil (Para, Amazonas, Bahia, Maranhao), Guyana
Senna	Cassieae	240	pantropical
Brachystegia	Detarieae s.l	c.30	west & east Africa
Brownea	Detarieae s.l	c.30	Guyana, French Guiana, Venezuela, Ecuador, Colombia, Peru
Crudia	Detarieae s.l	c.55	Malaysia & Indonesia (Sumatra, Java, Sabah, Kalimantan, Sarawak, Malay Peninsula), Guyana, Brazil (Para, Amazonas, Rondonia), Fr. Guiana, Surinam, Colombia, Zaire
Daniellia	Detarieae s.l	9	Tanzania, west Africa including Cameroon, Gabon, Zaire
Dicymbe	Detarieae s.l	15	Guyana, Brazil, Peru, Venezuela
Elizabetha	Detarieae s.l	10	Guyana, Surinam, French Guiana, Brazil
Guibourtia	Detarieae s.l	c.17	Brazil, Paraguay, Caribbean, Sierra Leone, Gabon, Congo, Zaire, Zambia, Mozambique, S. Africa
Macrolobium	Detarieae s.l	c.100	Guyana, Fr. Guiana, Surinam, Ecuador, Brazil, Peru, Venezuela, Colombia
Maniltoa	Detarieae s.l	c.25	Malaysia & Indonesia (Malay Peninsula, Celebes), New Guinea, , Australia
Paloue	Detarieae s.l	4	Guyana, French Guiana, Surinam
Peltogyne	Detarieae s.l	23	Guyana, Fr. Guiana, Surinam, Brazil, Peru, Mexico, W. Indies
Sindora	Detarieae s.l	18-20	Malaysia & Indonesia (Malay Peninsula, Sabah, Kalimantan, Sarawak, Sumatra, Celebes, Java
Zenkerella	Detarieae s.l	5	Tanzania, Cameroon, Gabon
MIMOSOIDEAE			
Genus	**Tribe**	**Sp #**	**Distribution**
Piptadenia	Mimoseae	c.21	Mexico, throughout Central and South America as far south as Argentina and peru
Prosopis (especially *P. africana*)	Mimoseae	c.44	SW North America, South America, SW Asia & Africa
Mimosa (especially sect. *Mimadenia*)	Mimoseae	c.480	mostly New World tropics, a few in tropical Africa, S Asia and Madagascar

The Rupert Barneby Award

James L. Luteyn

The New York Botanical Garden is pleased to announce that Aaron Liston, currently at the Department of Botany & Plant Pathology, Oregon State University, is the recipient of the Rupert Barneby Award for the year 2002. Dr. Liston will be studying the phylogenetic systematics of Astragalus and Trifolium.

The New York Botanical Garden now invites applications for the Rupert Barneby Award for the year 2003. The award of US$ 1,000.00 is to assist researchers to visit The New York Botanical Garden to study the rich collection of Leguminosae. Anyone interested in applying for the award should submit their curriculum vitae, a detailed letter describing the project for which the award is sought, and the names of 2-3 referees. Travel to the NYBG should be planned for sometime in the year 2003. The application should be addressed to Dr. James L. Luteyn, Institute of Systematic Botany, The New York Botanical Garden, 200th Street and Kazimiroff Blvd., Bronx, NY 10458-5126 USA, and received no later than December 1, 2002. Announcement of the recipient will be made by December 15th.

Anyone interested in making a contribution to THE RUPERT BARNEBY FUND IN LEGUME SYSTEMATICS, which supports this award, may send their check, payable to The New York Botanical Garden, to Dr. Luteyn.

Rupert Barneby, 1911–2000 (Obituary)

Gwilym P. Lewis

Rupert was born on October 6, 1911, in Monmouthshire, on the English-Welsh border. He went to harrow Public School from 1924–1929 and to Trinity College, Cambridge University from 1930–1932 where he gained a B. A. in History and Modern Languages.

One of Rupert's early enthusiasms in legumes when collecting in Spain and N. Africa prior to the Hitler war was the *Cytisus-Ulex-Stauracanthus* complex and it is evident that he entered the United States in 1937 with beans already a main focus of his botanical interest. He took up permanent residency in the United States in 1941.

His main research interests were xerophytic Floras, the taxonomy of the Leguminosae and Neotropical Menispermaceae. He described 1,160 species new to science in upwards of 140 publications, all of which are learned papers and many of which are monumental tomes. Of the 25 species named by other botanists in his honour, over a third are species of legume. Four genera honour him, and three of these are legumes, *Barnebydendron* Kirkbride, *Barnebyella* Podlech and *Rupertia* Grimes. Eight of his own legume publications (some coauthored): North American *Astragalus*, Daleae Imagines, The American Cassiinae, A monograph of *Mimosa*, A conspectus of *Erythrina* and three volumes on the New World Ingeae (including his last major work, *Calliandra*) describe in total 1,900 species.

Rupert's passing leaves an echoing gap in New York and in the world of botany.

Bean Bag readers' attention is drawn to "Ruperti Imagines: a portrait of Rupert Barneby" by Douglas Crase in Brittonia 53(1): 1–40 (2001).

Nodulation and Nitrogen Fixation

(Legume Nodulation reports not in Allen and Allen (1981))

Joseph H. Kirkbride, Jr.

Taxon	Status[1]	Souce[2]
Abarema bigemina (L.) Kosterm.	+	164
Abarema cochleata (Willd.) Barneby & J.W. Grimes var. *moniliformis* (Ducke) Barneby & J.W. Grimes	+	38
Abarema cochlicarpos (B.A. Gomes) Barneby & J.W. Grimes	+	50
Abrus canescens Baker	+	49
Abrus cantoniensis Hance	+	72
Abrus mollis Hance	+	72
Abrus pulchellus Wall. ex Thwaites subsp. *tenuiflorus* (Benth.) Verdc.	+	42
Acacia acradenia F. Muell.	+	17
Acacia amoena H.L. Wendl.	+	138
Acacia ancistrocarpa Maiden & Blakely	+	17
Acacia argyrodendron Domin	+	20
Acacia atramentaria Benth.	+	124
Acacia berlandieri Benth.	+	69
Acacia binervata DC.	+	170
Acacia bivenosa DC.	+	45
Acacia blakei Pedley	+	138
Acacia brassii Pedley	+	36
Acacia brevispica Harms	+	20
Acacia brumalis Maslin	+	35
Acacia burrowii Maiden	+	138
Acacia caesia (L.) Willd.	+	150
Acacia cambagei R.T. Baker	+	138
Acacia cangaiensis Tindale & Kodela	+	100
Acacia chrysotricha Tindale	+	170
Acacia cincinnat F. Muell.	+	36
Acacia citrinoviridis Tindale & Maslin	+	150
Acacia colei Maslin & A.J. Thomson	+	144
Acacia concinna (Willd.) DC.	+	57
Acacia concinna (Willd.) DC.	-	76
Acacia concurrens Pedley	+	38
Acacia coriacea DC.	+	20
Acacia cowleana Tate	+	17
Acacia cuthbrertsonii Luehm.	+	17
Acacia cyperophylla F. Muell. ex Benth.	+	20
Acacia dangarensis Tindale & Kodela	+	25
Acacia dictyophleba F. Muell.	+	17
Acacia difficilis Maiden	+	144
Acacia dimidiata Benth.	+	138
Acacia dolichostachya S.F. Blake	+	150
Acacia drepanolobium Harms ex Y. Sjostedt	+	13
Acacia dudgeoni Holland	+	74
Acacia dunnii (Maiden) Turrill	+	138
Acacia elatior Brenan	+	121
Acacia elongata Sieber ex DC.	+	138
Acacia eremaea C.R.P. Andrews	+	35
Acacia erioloba E. May.	+	64
Acacia etbaica Schweinf.	+	7

Ed. Note: Reference 150 is "Nodulation in Legumes" by Janet I. Sprent published by the Royal Botanic Gardens, Kew (2001).

Taxon	Status[1]	Souce[2]
Acacia falciformis DC.	+	170
Acacia ferruginea DC.	+	31
Acacia filicifolia Cheel & M.B. Welch	+	138
Acacia flavescens Benth.	+	20
Acacia fulva Tindale	+	170
Acacia gittinsii Pedley	+	138
Acacia glauca Moench	+	72
Acacia glaucocarpa Maiden & Blakely	+	100
Acacia gonocarpa F. Muell.	+	21
Acacia gourmaensis A. Chev.	+	74
Acacia gummifera Willd.	+	94
Acacia hemsleyi Maiden	+	17
Acacia hilliana Maiden	+	150
Acacia hippuroides Heward ex Benth.	+	150
Acacia hockii De Wild.	+	14
Acacia holosericea A. Cunn. ex G. Don	+	69
Acacia holosericea A. Cunn. ex G. Don var. *neurocarpa* (Hook.) Domin	+	144
Acacia implexa Benth.	+	138
Acacia irrorata Sieber ex Spreng.	+	170
Acacia irrorata Sieber ex Spreng. ssp. *irrorata*	+	170
Acacia irrorata Sieber ex Spreng. ssp. *velutinella* Tindale	+	170
Acacia iteaphylla F. Muell. ex Benth.	+	138
Acacia ixiophylla Benth.	+	35
Acacia julifera Benth.	+	36
Acacia lachnophylla F. Muell.	+	138
Acacia laeta R. Br. ex Benth.	+	74
Acacia latescens Benth.	+	104
Acacia leiocalyx (Domin) Pedley	+	138
Acacia leucoclada Tindale	+	21
Acacia linarioides Benth.	+	45
Acacia litakumensis Burch.	+	20
Acacia longispicata Benth.	+	144
Acacia lysiphloia F. Muell.	+	17
Acacia maconochieana Pedley	+	36
Acacia melleodora Pedley	+	17
Acacia minuta (M.E. Jones) R.M. Beauch.	+	6
Acacia montigena Brenan & Exell	+	150
Acacia mountfordiae Specht	+	138
Acacia mutabilis Maslin ssp. *mutabilis*	+	35
Acacia mucronata Willd. ex H.L. Wendl.	+	104
Acacia mutabilis Maslin ssp. *stipulifera* Maslin	+	35
Acacia nanodealbata J.H. Willis	+	170
Acacia negrii Pic. Serm.	+	7
Acacia neurocarpa Hook.	+	144
Acacia nilotica (L.) Willd. ex Delile ssp. *tomentosa* (Benth.) Brenan	+	45
Acacia notabilis F. Muell.	+	138
Acacia oncinocarpa Benth.	+	138
Acacia oshanesii F. Muell. & Maiden	+	63
Acacia papyrocarpa Benth.	+	138
Acacia parvipinnula Tindale	+	170
Acacia patagiata R.S. Cowan & Maslin	+	35
Acacia pellita O. Schwarz	+	105
Acacia pendula A. Cunn. ex G. Don	+	138
Acacia pentagona (Schumach & Thonn.) Hook. f.	+	68
Acacia planifrons Wight & Arn.	+	31
Acacia plectocarpa A. Cunn.	+	36
Acacia polyacantha Willd. ssp. *polyacantha*	+	31
Acacia polystachya Benth.	+	36

Taxon	Status[1]	Souce[2]
Acacia prasinata Asfaw	+	7
Acacia pyrifolia DC.	+	138
Acacia redolens Maslin	+	35
Acacia reficiens Wawra	+	121
Acacia rothii F.M. Bailey	+	36
Acacia rovumae Oliv.	+	74
Acacia sakalava Drake	-	74
Acacia schaffneri (S. Watson) F.J. Herm.	+	150
Acacia schottii Torr.	+	150
Acacia schweinfurthii Brenan & Exell	-	68
Acacia shirleyi Maiden	+	20
Acacia silvestris Tindale	+	170
Acacia simsii Benth.	+	36
Acacia sparsiflora Maiden	+	20
Acacia spectabilis A. Cunn. ex Benth.	+	36
Acacia stipuligera F. Muell.	+	17
Acacia suma (Roxb.) Buch.-Ham. ex J. Voigt	+	31
Acacia sutherlandii (F. Muell.) F. Muell.	+	20
Acacia teniana Harms	+	72
Acacia tenuissima F. Muell.	+	17
Acacia tephrina Pedley	+	20
Acacia thomsonii Maslin & M.W. McDonald	+	17
Acacia tortilis (Forssk.) Hayne	+	69
Acacia torulosa Benth.	+	104
Acacia trachycarpa E. Pritz.	+	134
Acacia trachyphloia Tindale	+	21
Acacia translucens A. Cunn. ex Hook.	+	150
Acacia trineura F. Muell.	+	138
Acacia tumida F. Muell. ex Benth.	+	20
Acacia ulicifolia (Salisb.) Court var. *brownei* (Steud.) Pedley	+	159
Acacia umbellata Benth.	+	21
Acacia verniciflua A. Cunn.	+	138
Acacia vestita Ker Gawl.	+	138
Acacia villosa (Sw.) Willd.	+	20
Acacia welwitschii Oliv.	+	69
Acacia yirrkallensis Specht	+	104
Acacia zanzibarica (S. Moore) Taub.	+	121
Acrocarpus fraxinifolius Wight ex Arn.	+	69
Acrocarpus fraxinifolius Wight ex Arn.	-	50
Adenanthera intermedia Merr.	-	68
Adenanthera microsperma Teijsm. & Binn.	+	130
Aeschynomene ciliata Vogel	+	4
Aeschynomene crassicaulis Harms	+	4
Aeschynomene cristata Vatke	+	98
Aeschynomene cristata Vatke var. *pubescens* J. Léon	+	145
Aeschynomene denticulata Rudd	+	46
Aeschynomene pfundii Taub.	+	4
Aeschynomene pratensis Small	+	46
Aeschynomene scabra G. Don	+	46
Aeschynomene tambacoundensis Berhaut	+	4
Aeschynomene uniflora E. Mey.	+	42
Aeschynomene villosa Poir.	+	4
Afzelia quanxensis Welw.	+	78
Albizia amara (Roxb.) Boivin	+	69
Albizia berteroana (Balb. ex DC.) M. Gomez	+	69
Albizia chevalieri Harms	+	165
Albizia dinklagei (Harms) Harms	-	10
Albizia edwallii (Hoehne) Barneby & J.W. Grimes	+	50

Taxon	Status[1]	Souce[2]
Albizia ferruginea (Guill. & Perr.) Benth.	+	163
Albizia glaberrima (Schumach. & Thonn.) Benth.	+	69
Albizia kalkora Prain	+	72
Albizia kalkora Prain	-	108
Albizia lucidor (Steud.) I.C. Nielsen ex H. Hara	+	76
Albizia petersiana (Bolle) Oliv.	+	69
Albizia schimperana Oliv.	+	69
Albizia suluensis Gerstner	+	61
Albizia zygia (DC.) J.F. Macbr.	+	163
Alhagi sparsifolia (Shap.) Shap.	+	72
Amicia zygomeris DC.	-	150
Amphicarpaea trisperma Miq.	+	155
Amphimas pterocarpoides Harms	-	150
Amphithalea ericaefolia (L.) Eckl. & Zeyh.	+	61
Anadenanthera colubrina (Vell.) Brenan	-	6
Anadenanthera colubrina (Vell.) Brenan var. *cebil* (Griseb.) Altschul	-	6
Anadenanthera falcata (Benth.) Speg.	+	87
Anadenanthera peregrina (L.) Speg. var. *falcata* (Benth.) Altschul	+	87
Andira anthelmia (Vell.) J.F. Macbr.	+	50
Andira nitida Mart. ex Benth.	+	53
Andira spectabilis Saldanha	+	68
Angylocalyx oligophyllus (Baker) Baker f.	-	150
Anthonotha fragrans (Baker f.) Exell & Hillc.	-	77
Anthyllis cytisoides L.	+	158
Anthyllis vulneraria L. ssp. *polyphylla* (DC.) Nyman	+	112
Apios carnea (Wall.) Benthy. ex Baker	+	76
Apuleia leiocarpa (Vogel) J.F. Macbr.	+	68
Arachis batizocoi Krapov. & W.C. Greg.	+	166
Arachis burkartii Handro	+	28
Arachis cardenasii Krapov. & W.C. Greg.	+	166
Arachis glabrata Benth. var. *hagenbeckii* (Harms) F.J. Herm.	+	150
Arachis helodes Mart. ex Krapov. & W.C. Greg.	+	47
Arachis monticola Krapov. & Rigoni	+	166
Arachis pintoi Krapov. & W.C. Greg.	+	38
Arachis pusilla Benth.	+	28
Arachis stenosperma Kapov. & W.C. Greg.	+	90
Archidendron basaltica (F. Muell.) I.C. Nielsen	+	20
Archidendron bigeminum (L.) I.C. Nielsen	+	164
Archidendron clypearia (Jack) I.C. Nielsen	-	71
Archidendron kanisii R.S. Cowan	+	150
Archidendropsis thozetiana (F. Muell.) I.C. Nielsen	+	23
Argyrolobium filiforme Eckl. & Zeyh.	+	61
Argyrolobium roseum ssp. *ornithopodioides* (Jaub. & Spach.) Jafri & Ali	+	9
Aspalathus acuminata Lam. ssp. *pungens* (Thunb.) Dahlgren	+	61
Aspalathus asparagoides L. f. ssp. *asparagoides*	+	61
Aspalathus chortophila Eckl. & Zeyh. Ssp. *kougaensis* Dahlgren	+	61
Aspalathus confusa Dahlgren	+	61
Aspalathus divaricata Thunb.	+	40
Aspalathus forbesii Harv.	+	40
Aspalathus frankenioides DC.	+	61
Aspalathus heterophylla L. f. ssp. *heterophylla*	+	61
Aspalathus hirta E. Mey. ssp. *hirta*	+	61
Aspalathus hispida Thunb.	+	40
Aspalathus lactea Thunb. ssp. *breviloba* Dahlgren	+	61
Aspalathus lactea Thunb. ssp. *lactea*	+	61
Aspalathus longifolia Benth.	+	61
Aspalathus longipes Harv.	+	61
Aspalathus nivea Thunb.	+	60

Taxon	Status[1]	Souce[2]
Aspalathus opaca Eckl. & Zeyh. ssp. *rostriloba* Dahlgren	+	61
Aspalathus pachyloba Benth. ssp. *macroclada* Dahlgren	+	61
Aspalathus quinquefolia L. ssp. *virgata* (Thunb.) Dahlgren	+	61
Aspalathus retroflexa L. ssp. *bicolor* (Eckl. & Zeyh.) Dahlgren	+	61
Aspalathus spicata Thunb. ssp. *cliffortioides* (Schltr.) Dahlgren	+	61
Aspalathus spinosa L. ssp. *flavispina* (Presl ex Benth.) Dahlgren	+	61
Aspalathus spinosa L. ssp. *glauca* (Eckl. & Zeyh.) Dahlgren	+	61
Aspalathus spinosissima R. Dahlgren	+	33
Aspalathus ternata (Thunb.) Druce	+	61
Aspalathus tuberculata Walp.	+	61
Astragalus complanatus R. Br. ex Bunge	+	162
Astragalus coquimbensis (Hook. & Arn.) Reiche	+	59
Astragalus coronilloides Ulbr.	+	162
Astragalus danicus Retz.	+	127
Astragalus densiflorus Kar. & Kir.	+	169
Astragalus donianus DC.	+	76
Astragalus echinatus Murray	+	150
Astragalus epiglottis L.	+	150
Astragalus falciformis Desf.	+	150
Astragalus glaux L.	+	150
Astragalus gombo Bunge	+	150
Astragalus graveolens Benth.	+	117
Astragalus himalayanus Klotzsch	+	150
Astragalus jaegerianus Munz	+	59
Astragalus luristanicus Freyn	+	146
Astragalus miniatus Bunge	+	162
Astragalus palmeri A. Gray	+	48
Astragalus persepolitanus Boiss.	+	9
Astragalus politovii Krylov	+	120
Astragalus scaberrimus Bunge	+	162
Astragalus sesameus L.	+	150
Astragalus stevenianus DC.	+	162
Astragalus tibetanus Benth. ex Bunge	+	76
Astragalus tribuloides Delile	+	9
Astragalus uliginosus L.	+	120
Astragalus xiphocarpus Benthy. ex Bunge	+	76
Ateleia apetala Griseb.	+	150
Ateleia gummifera (DC.) D. Dietr.	+	150
Baphia bequaertii De Wild.	+	77
Baphia laurifolia Baill.	+	77
Baphia maxima Baker	+	150
Baphia pubescens Hook. f.	+	122
Baphiopsis parviflora Benth. ex Baker	-	150
Bauhinia blakeana Dunn	-	69
Bauhinia brachycarpa Wall. ex Benth.	-	72
Bauhinia championii (Benth.) Benth.	+	72
Bauhinia hunanensis Hand.Mazz.	+	72
Bauhinia microstachya (Raddi) J.F. Macbr.	-	50
Bauhinia ornata Kurz var. *austrosinensis* (Tang & Wang) T.C. Chen	-	72
Bauhinia ornata Kurz var. *kerri* (Gapnep.) K. Larsen & S.S. Larsen	-	72
Bauhinia rufescens Lam.	-	165
Bauhinia scandens L. var. *anguina* (Roxb.) H. Ohashi	-	76
Bauhinia vahlii Wight & Arn.	+	76
Bauhinia variegata L. var. *candida* Voigt	-	14
Berlinia bracteosa Benth.	-	77
Berlinia craibiana Baker f.	-	79
Bocoa prouacensis Aubl.	+	15
Bossiaea bossiaeoides (A. Cunn. ex Benth.) Court	+	135

Taxon	Status[1]	Souce[2]
Bossiaea foliosa A. Cunn.	+	29
Brachystegia bussei Harms	-	79
Brachystegia cynometroides Harms	-	150
Brachystegia floribunda Benth.	-	79
Brachystegia glaberrima R.E. Fr.	-	79
Brachystegia longifolia Benth.	-	79
Brachystegia spiciformis Benth.	+	69
Brachystegia taxifolia Harms	-	79
Brachystegia wangermeeana De Wild.	-	79
Brownea longipedicellata Huber	-	50
Brya microphylla Bisse	+	150
Bryaspis lupulina (Benth.) P.A. Duvign.	+	42
Caesalpinia cacalaco Bonpl.	-	69
Caesalpinia digyna Rottler	-	76
Caesalpinia eriostachya Benth.	-	44
Caesalpinia pyramidalis Tul.	-	50
Caesalpinia sappan L.	+	72
Caesalpinia velutina (Britton & Rose) Standl.	-	44
Callerya atropurpurea (Wall.) Schot	-	108
Callerya cinerea (Benth.) Schot	+	71
Callerya reticulata (Benth.) Schot	+	71
Callerya speciosa (Champ.) Schot	+	72
Calliandra eriophylla Benth.	+	20
Calliandra harrisii (Lindl.) Benth.	+	50
Calliandra houstoniana (Mill.) Standl. var. *calothyra* (Meisn.) Barneby	+	146
Calliandra tergemina (L.) Benth. *emarginata* (Willd.) Barneby	+	5
Calpocalyx dinklagei Harms	-	77
Campylotropis eriocarpa (DC.) Schindl.	+	131
Campylotropis stenocarpa (Klotzsch) Schindl.	+	117
Canavalia brasiliensis Mart. ex Benth.	+	30
Caragana brevispina Royle ex Benth.	+	117
Caragana intermedia Kuang & H.C. Fu	+	155
Caragana leveillei Kom.	-	71
Caragana pleiophylla (Regel) Pojark.	+	72
Caragana polourensis Franch.	+	72
Caragana pruinosa Kom.	+	156
Caragana rosea Turcz. ex Kom.	+	71
Caragana turkestanica Kom.	-	71
Caragana versicolor Benth.	+	169
Cassia montana B. Hayne ex Roth	-	143
Cenostigma tocantinum Ducke	-	50
Centrosema macrocarpum Benth.	-	2
Centrosema sagitttatum (Humb. & Bonpl. ex Willd.) Brandegee	+	38
Centrosema schottii (Millsp.) K. Schum.	+	38
Ceratonia siliqua L.	+	82
Cercis chingii Chun	-	71
Cercis gigantea ined.	-	72
Cercis glabra Pamp.	-	71
Chadsia grevei Drake	+	149
Chamaecrista capensis (Thunb.) E. Mey. var. *flavescens* (E. Mey.) Vogel	+	61
Chamaecrista conferta (Benth.) H.S. Irwin & Barneby	+	152
Chamaecrista conferta (Benth.) H.S. Irwin & Barneby var. *virgata* (H.S. Irwin & Barneby) H.S. Irwin & Barneby	+	150
Chamaecrista coradinii Barneby	+	152
Chamaecrista decumbens (Benth.) H.S. Irwin & Barneby	+	150
Chamaecrista desvauxii (Collad.) Killip var. *brevipes* (Benth.) H.S. Irwin & Barneby	+	150
Chamaecrista desvauxii (Collad.) Killip var. *circumdata* H.S. Irwin & Barneby	+	150
Chamaecrista desvauxii (Collad.) Killip var. *desvauxii*	+	84

Taxon	Status[1]	Souce[2]
Chamaecrista desvauxii (Collad.) Killip var. *glauca* (Hassl.) H.S. Irwin & Barneby	+	52
Chamaecrista desvauxii (Collad.) Killip var. *linearis* (H.S. Irwin) H.S. Irwin & Barneby	+	150
Chamaecrista desvauxii (Collad.) Killip var. *mollissima* (Benth.) H.S. Irwin & Barneby	+	150
Chamaecrista fagonioides (Vogel) H.S. Irwin & Barneby	+	152
Chamaecrista fagonioides (Vogel) H.S. Irwin & Barneby var. *macrocalyx* (H.S. Irwin & Barneby) H.S. Irwin & Barneby	+	150
Chamaecrista geminata (Benth.) H.S. Irwin & Barneby	+	152
Chamaecrista glandulosa (L.) Greene var. *brasiliensis* (Vogel) H.S. Irwin & Barneby	+	52
Chamaecrista isidorea (Benth.) H.S. Irwin & Barneby	+	150
Chamaecrista lineata (Sw.) Greene	+	150
Chamaecrista neesiana (Benth.) H. Irwin & Barneby var. *subnitida* (Taub.) H. Irwin & Barneby	+	150
Chamaecrista nictitans (L.) Moench ssp. *patellaria* (Coll.) H.S. Irwin & Barneby var. *glabrata* (Vogel) H.S. Irwin & Barneby	+	68
Chamaecrista orbiculata (Benth.) H.S. Irwin & Barneby	+	152
Chamaecrista orbiculata (Benth.) H.S. Irwin & Barneby var. *orbiculata*	+	150
Chamaecrista pilosa (L.) Greene var. *pilosa*	+	24
Chamaecrista plumosa (E. Mey) H. Irwin & Barneby. var. *plumosa*	+	61
Chamaecrista ramosa (Vogel) H.S. Irwin & Barneby var. *curvifolia* (Vogel) H.S. Irwin & Barneby	+	150
Chamaecrista rotundifolia (Pers.) Greene var. *rotundifolia*	+	150
Chamaecrista serpens (L.) Greene var. *serpens*	+	150
Chamaecrista serpens (L.) Greene var. *wrightii* (A. Gray) H.S. Irwin & Barneby	+	68
Chamaecrista tetraphila Desv.	+	84
Chesneya cuneata (Benth.) Ali	-	117
Cladrastis wilsonii Takeda	+	71
Clitoria sagotii Fantz	+	150
Cojoba arborea (L.) Britton & Rose var. *arborea*	+	68
Colutea istria Mill.	+	44
Conzattia multiflora (B.L. Rob.) Standl.	-	150
Craibia brevicaudata (Vatke) Dunn	+	69
Cratylia hypargyraea Mart.	+	50
Crotalaria angulata Mill.	+	76
Crotalaria atrorubens Hochst. ex Benth.	+	49
Crotalaria brevidens Benth.	+	38
Crotalaria brevis Domin	+	65
Crotalaria chinensis L.	+	57
Crotalaria eremaea F. Muell. ssp. *eremaea*	+	65
Crotalaria excisa (Thunb.) Baker f.	+	60
Crotalaria ferruginea Graham ex Benth.	+	76
Crotalaria glaucoides Baker f.	+	42
Crotalaria hainanensis Huang	+	57
Crotalaria humifusa Benth.	+	76
Crotalaria humilis Eckl. & Zeyh.	+	60
Crotalaria lathyroides Guill. & Perr.	+	42
Crotalaria mitchellii Benth.	+	65
Crotalaria perrottetii DC.	+	140
Crotalaria saharae Coss.	+	150
Crotalaria sessiliflora L. ssp. *hazarensis* Ali	+	9
Crotalaria sessiliflora L. ssp. *sessiflora*	+	9
Crotalaria trifoliastrum Willd.	+	146
Cryptosepalum exfoliatum De Wild.	-	79
Cullen australasicum (Schltdl.) J.W. Grimes	+	65
Cullen cinereum (Lindl.) J.W. Grimes	+	65
Cyathostegia mathewsii (Benth.) Schery	+	150
Cyclolobium vecchii A. Samp. ex Hoehne	+	50

Taxon	Status[1]	Souce[2]
Cyclopia buxifolia (Burm. f.) Kies	+	153
Cyclopia dregeana Kies	+	153
Cyclopia intermedia E. Mey.	+	153
Cyclopia latifolia DC.	+	153
Cyclopia longifolia Vogel	+	153
Cyclopia meyeriana Walp.	+	153
Cyclopia pubescens Eckl. & Zeyh.	+	153
Cyclopia sessiliflora Eckl. & Zeyh.	+	153
Cyclopia subternata Vogel	+	153
Cylicodiscus gabunensis Harms	-	150
Cytisus arboreus (Desf.) DC.	+	1
Dahlstedtia pinnata (Benth.) Malme	-	50
Dalbergia albiflora A. Chev. ex Hutch. & Dalziel	+	99
Dalbergia balansae Prain	+	72
Dalbergia brasiliense Vogel	+	50
Dalbergia candenatensis (Dennst.) Prain	+	38
Dalbergia cultrata Benth.	+	72
Dalbergia dalzielii Baker f. ex Hutch. & Dalziel	+	99
Dalbergia decipularis Rizzini & A. Mattos	+	50
Dalbergia dyeriana Prain	-	71
Dalbergia hainanensis Merr. & Chun	+	72
Dalbergia hancei Benth.	+	71
Dalbergia hostilis Benth.	+	99
Dalbergia hupeana Hance	+	72
Dalbergia lanceolaria L. f. var. *assamica* (Benth.) Thoth.	+	72
Dalbergia miscolobium Benth.	+	50
Dalbergia obtusifolia (Baker) Prain	+	72
Dalbergia odorifera T.C. Chen	+	72
Dalbergia oligophylla Hutch. & Dalziel	+	150
Dalbergia pinnata (Lour.) Prain	+	72
Dalbergia riparia (Mart.) Benth.	+	50
Dalbergia rufa G. Don	+	99
Dalbergia saxatilis Hook. f.	+	99
Dalbergia sericea G. Don	+	76
Dalbergia stipulacea Roxb.	+	76
Dalbergia tsoi Merr. & Chun	+	72
Dalbergia villosa (Benth.) Benth.	+	50
Dalea mollissima (Rydb.) Munz	+	48
Dalea virgata Lag.	+	150
Daniellia alsteeniana Duvign.	-	79
Daniellia oliveri (Rolfe) Hutch. & Dalziel	-	165
Daviesia decurrens Meisn.	+	151
Daviesia horrida L. Preiss ex Meisn.	+	149
Daviesia mimosoides R. Br.	+	114
Dendrolobium dispermum (Hayata) Schindl.	+	150
Dendrolobium triangulare (Retz.) Schindl.	+	72
Derris cumingii Benth.	+	43
Derris cuneifolia Benth,	+	76
Derris marginata (Roxb.) Benth.	+	76
Derris trifoliata Lour.	+	72
Desmanthus velutinus Scheele	+	146
Desmodium axillare (Sw.) DC.	+	38
Desmodium campylocaulon F. Muell. ex Benth.	+	38
Desmodium concinnum DC.	+	76
Desmodium confertum DC.	+	76
Desmodium cuneatum Hook. & Arn.	+	38
Desmodium flagellare Benth.	+	65
Desmodium laburnifolium (Poir.) DC.	+	143

Taxon	Status[1]	Souce[2]
Desmodium macrocarpum Domin	+	65
Desmodium multiflorum DC.	+	131
Desmodium neomexicanus A. Gray	+	146
Desmodium podocarpum DC.	+	9
Desmodium podocarpum DC. var. *szechuenense* Craib	+	72
Desmodium renifolium (L.) Schindl.	+	76
Desmodium rubrum (Lour.) DC.	+	72
Desmodium salicifolium (Poir.) DC.	+	24
Desmodium sandwicense E. Mey.	+	146
Desmodium sinuatum Baker	+	155
Desmodium trichostachyum Benth.	+	65
Detarium macrocarpum Harms	-	150
Detarium senegalense J.F. Gmel.	-	165
Dicorynia guianensis Amshoff	+	15
Dicorynia guianensis Amshoff	-	62
Didelotia africana Baill.	-	77
Dillwynia floribunda Sm. var. *floribunda*	+	65
Dillwynia sericea A. Cunn.	+	106
Dimorphandra conjugata (Splitg.) Sandwith	+	150
Dimorphandra vernicosa Benth.	+	50
Diplotropis purpurea (Rich.) Amshoff var. *purpurea*	+	150
Discolobium leptophyllum Benth.	+	88
Discolobium psoraliifolium Benth.	+	109
Discolobium pulchellum Benth.	+	109
Dorycnium pentaphyllum Scop. ssp. *germanicum* (Gremli) Gams	+	112
Duparquetia orchidacea Baill.	-	150
Dussia martinicensis Krug & Urb. ex Taub.	+	142
Dussia martinicensis Krug & Urb. ex Taub.	-	150
Ebenopsis confinis (Standl.) Barneby & J.W. Grimes	+	150
Ebenus pinnata Aiton	+	150
Elizabetha durissima Ducke	-	50
Elizabetha paraensis Ducke	-	50
Elizabetha princeps Schomb. ex Benth.	-	50
Elizabetha speciosa Ducke	-	50
Entada africana Guill. & Perr.	+	69
Entada mannii (Oliv.) Tisser.	+	150
Entada rheedei Spreng. ssp. *sinohimalensis* (Grierson & Long) Panigr.	+	76
Eriosema ellipticifolium Schinz	+	61
Eriosema glomeratum (Guill. & Perr.) Hook. f.	+	42
Erythrina americana Mill.	+	69
Erythrina arborescens Roxb.	+	76
Erythrina barqueroana Krukoff & Barneby	+	50
Erythrina brucei Schweinf.	+	8
Erythrina cochleata Stnadl.	+	44
Erythrina edulis Triana	+	137
Erythrina sandwicensis O. Deg.	+	44
Erythrina senegalensis DC.	+	165
Erythrophleum chlorostachys (F. Muell.) Baill.	+	150
Erythrophleum fordii Oliv.	+	41
Erythrophleum ivorense A. Chev.	+	77
Exostyles venusta Spreng.	-	50
Eysenhardtia polystachya (Ortega) Sarg.	-	68
Eysenhardtia texana Scheele	+	146
Flemingia procumbens Roxb.	+	131
Flemingia prostrata Roxb.	+	150
Galactia rubra (Jacq.) Urb.	+	150
Gastrolobium bilobium R. Br.	+	151
Genista falcata Brot.	+	60

Taxon	Status[1]	Souce[2]
Genista ferox Poir.	+	150
Genista microcephala Coss. & Durieru	+	150
Genista numidica Spach ssp. *nmmidica*	+	150
Genista tinctoria L. var. *ovata* (Waldst. & Kit) F.W. Schultz	+	5
Genista tricuspidata Desf.	+	150
Gilbertiodendron mayombense (Pellegr.) J. L,onard	-	77
Gleditsia amorphoides (Griseb.) Taub.	-	6
Gleditsia australis Hemsl.	-	71
Gleditsia japonica Miq. var. *japonica*	-	73
Gleditsia japonica Miq. var. *velutina* L.C. Li	-	71
Gleditsia macrantha Desf.	+	130
Gliricidia sepium (Jacq.) Kunth ex Walp.	-	108
Glycine falcata Benth.	+	65
Glycine microphylla (Benth.) Tindale	+	75
Glycine soja Siebold & Zucc.	+	146
Glycyrrhiza pallidiflora Maxim.	+	32
Gueldenstaedtia himalaica Baker	+	169
Gueldenstaedtia multiflora Bunge	+	155
Gueldenstaedtia verna (Georgi) Boriss.	+	156
Gueldenstaedtia verna (Georgi) Boriss. ssp. *multiflora* (Bunge) H.P. Tsui	+	156
Gymnocladus chinensis Baill.	-	72
Harpalyce cubensis Griseb.	+	150
Harpalyce macrocarpa Britton & P. Wilson	+	150
Hedysarum aculeolatum Boiss.	+	150
Hedysarum carnosum Desf.	+	146
Hedysarum flexosum L.	+	146
Hedysarum humile L.	+	150
Hedysarum pallens Desf.	+	95
Hedysarum pallidum Desf.	+	150
Hesperalbizia occidentalis (Brandegee) Barbeny & J.W. Grimes	+	150
Hippocrepis minor Munby	+	150
Humboldtia laurifolia Vahl	+	164
Hymenolobium janeirense Kuhlm.	-	50
Hymenostegia afzelii (Oliv.) Harms	-	77
Hypocalyptus coluteoides (Lam.) R. Dahlgren	+	150
Indigastrum parviflorum (Heyne ex Wight & Arn.) Schrire	+	65
Indigofera amoena Aiton	+	60
Indigofera aquae-nitensis Bremek.	+	60
Indigofera argyraea Eckl. & Zeyh.	+	60
Indigofera brevidens Benth.	+	167
Indigofera bungeana Walp.	+	71
Indigofera candicans Aiton	+	60
Indigofera capillaris Thunb.	+	60
Indigofera chuniana F.P. Metcalf	+	72
Indigofera coriacea Aiton var. *coriacea*	+	61
Indigofera coriacea Aiton var. *minor* (E. Mey.) Harv.	+	61
Indigofera cylindracea Wall. ex Baker	+	76
Indigofera daleoides Benth. ex Harv. var. *daleoides*	+	61
Indigofera filifolia Thunb.	+	61
Indigofera flabellata Harv.	+	61
Indigofera fortunei Craib	+	71
Indigofera galegoides DC.	+	72
Indigofera hebepetala Benth. Ex Baker	+	76
Indigofera heterantha Brandis	+	117
Indigofera incana Thunb.	+	61
Indigofera lespedezioides Kunth	-	83
Indigofera linnaei Ali	+	38
Indigofera litoralis Chun & T.C. Chen	+	57

Taxon	Status[1]	Souce[2]
Indigofera miniata Ortega var. *leptosepala* (Nutt. ex Torr. A. Gray) B.L. Turner	+	146
Indigofera neglectum Ledeb.	+	146
Indigofera paniculata Pers.	+	49
Indigofera pratensis F. Muell.	+	65
Indigofera pulchra Willd.	+	49
Indigofera rhodantha Fourc.	+	60
Indigofera senegalensis Lam.	+	42
Indigofera simplicifolia Lam.	+	49
Indigofera trifoliata L.	+	38
Indigofora hendecaphylla Jacq.	+	146
Indopiptadenia oudhensis (Brandis) Brenan	+	76
Inga chocoensis Killip ex T.S. Elias	+	150
Inga congesta T.D. Penn.	+	50
Inga cordistipula Mart.	+	50
Inga hispida Schott ex Benth.	+	50
Inga jinicuil G. Don	+	69
Inga lenticifolia Benth.	+	50
Inga maritima Benth.	+	50
Inga nobilis Willd. ssp. *quaternata* (Poepp. & Endl.) T.D. Penn.	+	68
Inga oerstediana Benth.	+	69
Inga semialata (Vell.) Mart.	+	136
Isoberlinia angolensis (Benth.) Hoyle & Brenan	-	79
Isotropis atropurpurea F. Muell.	+	167
Jacksonia dilatata Benth.	+	135
Julbernardia paniculata (Benth.) Troupin	-	79
Koompassia malaccensis Maingay ex Benth.	-	69
Lablab pourpureus (L.) Sweet subsp. *Purpureus*	+	5
Lathyrus humilis (Ser.) Fischer ex Spreng.	+	9
Lathyrus lanszwertii Kellogg var. *leucanthus* (Rydb.) Dorn	+	91
Lathyrus littoralis (Nutt.) Endl.	+	80
Lathyrus szowitsii Boiss.	+	27
Lebeckia multiflora E. Mey.	+	60
Leptoderris nobilis (Bajer) Dunn	+	150
Lespedeza buergeri Miq.	+	72
Lespedeza chinensis G. Don	+	72
Lespedeza daurica (Laxm.) Schindl	+	146
Lespedeza × *divaricata* (Nakai) T.B. Lee	+	150
Lespedeza floribunda Bunge	+	72
Lespedeza formosa (Vogel) Koehne ssp. *elliptica* (Benth. ex Maxim.) S. Akiyama & H. Ohba	+	72
Lespedeza homoloba Nakai	+	61
Lespedeza japonica L.H. Bailey	+	146
Lespedeza tomentosa (Thunb.) Siebold ex Maxim.	+	146
Lessertia brachypus Harv.	+	60
Lessertia capitata E. Mey.	+	60
Lessertia diffusa R. Br.	+	60
Lessertia excisa DC.	+	60
Lessertia inflata Harv.	+	61
Lessertia macrostachya DC.	+	60
Lessertia spinescens E. Mey.	+	60
Leucaena collinsii Britton & Rose	+	69
Leucaena collinsii Britton & Rose ssp. *collinsii*	+	116
Leucaena collinsii Britton & Rose ssp. *zacapana* C.E. Hughes	+	116
Leucaena cuspidata Standl.	+	116
Leucaena esculenta (DC.) Benth. ssp. *esculenta*	+	153
Leucaena esculenta (DC.) Benth. ssp. *matudae* Z rate	+	153
Leucaena greggii S. Watson	+	116
Leucaena involucrata Z rate	+	116

Taxon	Status[1]	Souce[2]
Leucaena lanceolata S. Watson	+	69
Leucaena lanceolata S. Watson ssp. *lanceolata*	+	116
Leucaena lanceolata S. Watson ssp. *sousae* Z rate	+	116
Leucaena lanceolata S. Watson var. *lanceolata*	+	116
Leucaena lanceolata S. Watson var. *sousae* (Z rate) C.E. Hughes	+	116
Leucaena lempirana C.E. Hughes	+	116
Leucaena macrophylla Benth.	+	69
Leucaena macrophylla Benth. ssp. *macrophylla*	+	116
Leucaena macrophylla Benth. ssp. *nelsonii* (Britton & Rose) Z rate	+	116
Leucaena magnifica (C.E. Hughes) C.E. Hughes	+	116
Leucaena matudae (Z rate) C.E. Hughes	+	116
Leucaena multicapitula Schery	+	116
Leucaena pallida Britton & Rose	+	20
Leucaena pueblana Britton & Rose	+	116
Leucaena retusa Benth.	+	69
Leucaena retusa Benth.	-	70
Leucaena salvadorensis Standl. ex Britton & Rose	+	76
Leucaena shannonii Donn. Sm.	+	69
Leucaena shannonii Donn. Sm. ssp. *magnifica* C.E. Hughes	+	116
Leucaena shannonii Donn. Sm. ssp. *shannonii*	+	116
Leucaena trichandra (Zucc.) Urb.	+	116
Leucomphalos capparideus Planch.	-	150
Liparia parva Vogel ex Walp.	+	61
Liparia splendens (Burm. f.) Bos & De Wit ssp. *splendens*	+	61
Loesenera talbotii Baker f.	-	150
Lonchocarpus filipes Benth.	+	50
Lonchocarpus leucanthus Burkart	+	50
Lonchocarpus muehlbergianus Hassl.	+	50
Lonchocarpus roseus (Mill.) DC.	+	142
Lonchocarpus spruceanus Benth.	+	50
Lotononis benthamiana Dumm.	+	60
Lotononis brachyloba Benth.	+	60
Lotononis digitata Harv.	+	61
Lotononis falcata (E. Mey.) Benth.	+	60
Lotononis foliosa H. Bol.	+	60
Lotononis lenticula (E. Mey.) Benth.	+	61
Lotononis leptoloba H. Bol.	+	60
Lotononis longiflora H. Bol.	+	60
Lotononis magnistipulata Dumm.	+	60
Lotononis maximiliani De Wild.	+	60
Lotononis pentaphylla Benth.	+	60
Lotononis quinata Benth.	+	60
Lotononis serpens (E. Mey.) Dahlgren	+	61
Lotononis strigillosa (Merxm. & A. Schreib.) A. Schreib.	+	61
Lotus alpinus (DC.) Schleich. ex Ramond	+	85
Lotus corniculatus L. var. *hirsutus* W.D.J. Kock	+	112
Lotus kyylovii Schischk. & Serg.	+	125
Lotus macrotrichus Boiss.	+	89
Lotus mearnsii (Britton) Greene	+	58
Lotus preslii Ten.	+	66
Lotus rigidus (Benth.) Greene	+	48
Lotus salsuginosus Greene	+	146
Lotus schoelleri Schweinf.	+	125
Lotus strigosus (Nutt.) Greene var. *tomentellus* (Greene) Isely	+	48
Luetzelburgia auriculata (Allemao) Ducke	-	50
Luetzelburgia guaissara Toledo	-	50
Lupinus argenteus Pursh	+	146
Lupinus argenteus Pursh var. *holosericeus* (Nutt.) Barneby	+	92

Taxon	Status[1]	Souce[2]
Lupinus argenteus Pursh var. *rubricaulis* (Greene) S.L. Welsh	+	91
Lupinus atlanticus Gladst.	+	146
Lupinus campestris Schltdl. & Cham.	+	12
Lupinus chamissonis Eschsch.	+	80
Lupinus cosentinii Guss.	+	128
Lupinus exaltatus Zucc.	+	12
Lupinus formosus Greene	+	146
Lupinus hispanicus Boiss. & Reut.	+	146
Lupinus meridanus Moritz ex C.P. Sm.	+	160
Lupinus montanus Kunth	+	12
Lupinus princei Harms	+	81
Lupinus sericeus Pursh	+	146
Lupinus texensis Hook.	+	5
Lysiloma divaricatum (Jacq.) J.F. Macbr.	+	150
Lysiloma latisiliquum (L.) Benth.	+	118
Lysiloma tergeminum Benth.	+	150
Machaerium angustifolium Vogel	+	50
Machaerium arboreum (Jacq.) Vogel	+	126
Machaerium brasiliense Vogel	+	50
Machaerium gracile Benth.	+	50
Machaerium hirtum (Vell.) Stellfield	+	50
Machaerium milleflorum Pittier	+	126
Machaerium myrianthum Benth.	+	150
Machaerium quinatum (Aubl.) Sandwith var. *quinatum*	+	150
Machaerium stipitatum (DC.) Vogel	+	50
Machaerium triste Vogel	+	50
Macroptilium gibbosifolium (Ortega) A. Delgado	+	146
Macroptilium gracile (Poepp. ex Benth.) Urb.	+	38
Macrotyloma uniflorum (Lam.) Verdc.	+	146
Medicago archiducis-nicolai Sirj.	+	169
Medicago doliata Carmign.	+	11
Medicago granadensis Willd.	+	22
Medicago noeana Boiss.	+	119
Medicago polyceratia (L.) Trautv.	+	86
Medicago radiata L.	+	42
Medicago rigiduloides E. Small	+	11
Medicago rotata Boiss.	+	146
Medicago sativa L. nothossp. *Varia* (Martyn) Arcang.	+	147
Meizotropis buteiformis Voigt	+	76
Melilotus infestus Guss.	+	150
Melilotus macrocarpus Coss. & Durieru	+	150
Melilotus officinalis Lam.	+	5
Melolobium aethiopicum (L.) Druce	+	61
Melolobium calycinum Benth.	+	60
Melolobium humile Eckl. & Zeyh.	+	60
Microberlinia bisulcata A. Chev.	-	150
Mildbraediodendron excelsum Harms	-	150
Millettia extensa (Benth.) Benth. ex Baker	+	76
Millettia ferruginea (Hochst.) Baker	+	67
Millettia glaucescens Kurz	+	76
Millettia laurentii De Wild.	+	93
Millettia thonningii (Schumach.) Baker	+	69
Millettia usaramoensis Taub.	+	5
Mimosa affinis B.L. Rob.	+	161
Mimosa arenosa (Willd.) Poir. Var. *arenosa*	+	68
Mimosa artemisiana Heringer & Paula	+	50
Mimosa ceratonia L.	+	68
Mimosa laticifera Rizzini & A. Mattos	+	50

Taxon	Status[1]	Souce[2]
Mimosa luisana Brandegee	+	150
Mimosa ophthalmocentra Mart. ex Benth.	+	150
Mimosa polyantha Benth.	+	150
Mimosa quadrivalvis L. var. *nuttallii* (DC.) Beard	+	146
Mimosa rubicaulis Lam. ssp. *himalayana* (Gamble) H. Ohashi	+	76
Mucuna bracteata DC. ex Kurz	+	97
Mucuna sempervirens Hemsl.	+	71
Neonotonia wightii (Wight & Arn) J.A. Lackey	+	38
Neptunia pubescens Benth.	+	88
Newtonia hildebrandtii (Vatke) Torre	-	68
Omosia krugii Urb.	+	68
Onobrychis kabylica (Bornm.) Sirj.	+	150
Onobrychis paucidentata Pomel	+	150
Ononis alba Poir.	+	150
Ononis antennata Pomel ssp. *antennata*	+	150
Ononis euphrasiifolia Desf.	+	150
Ormocarpum sennoides (Willd.) DC.	+	50
Ormosia apiculata L. Chen	+	72
Ormosia emarginata (Hook. & Arn.) Benth.	+	72
Ormosia glauca Wall.	+	76
Ormosia henryi Prain	+	72
Ormosia hosei Hemsl. & E.H. Wilson	+	71
Ormosia pinnata (Lour.) Merr.	+	41
Ormosia semicastrata Hance	+	72
Ormosia semicastrata Hance f. *litchiifolia* F.C. How	+	72
Ormosia semicastrata Hance f. *pallida* F.C. How	+	72
Ormosia xylocarpa Chun ex Merr. & L. Chen	+	71
Otholobium glandulosum (L.) J.W. Grimes	+	38
Otholobium striatum (Thunb.) C.H. Stirt.	+	60
Oxylobium scandens (Sm.) Benth.	+	150
Oxyrhynchus volubilis Brandegee	+	149
Oxytropis anertii Nakai	+	150
Oxytropis campanulata Vassilcz.	+	113
Oxytropis kansuensis Bunge	+	169
Oxytropis melanocalyx Bunge	+	169
Oxytropis nigrescens (Pall.) Fisch. ex DC. var. *uniflora* (Hook.) Barneby	+	133
Oxytropis sericea Nutt.	+	27
Oxytropis splendens Douglas ex Hook.	+	101
Pachyrhizus ahipa (Wedd.) Parodi	+	96
Pachyrhizus tuberosus (Lam.) Spreng.	+	146
Paramacrolobium coeruleum (Taub.) J. Léonard	-	69
Parapiptadenia excelsa (Griseb.) Burkart	+	6
Paraserianthes toona (F.M. Bailey) I.C. Nielsen	+	20
Parkia bicolor A. Chev.	-	150
Parkia biglobosa (Jacq.) R. Br. ex G. Don	-	165
Parkia filicoidea Welw. ex Oliv.	+	20
Parkia ulei (Harms) Kuhlm. var. *surinamensis* Kleinhoonte	-	150
Parkinsonia aculeata L.	+	68
Parkinsonia microphylla Torr.	-	26
Peltophorum dasyrhachis (Miq.) Kurz	-	139
Pentaclethra macrophylla Benth.	+	44
Phaseolus coccineus L. subsp. *coccineus*	+	5
Phaseolus coccineus L. var. *darwinianus* Hern.-Xol. & Miranda-Colín	+	146
Phaseolus filiformis Benth.	+	146
Piptadeniastrum africanum (hook. f.) Brenan	+	93
Piscidia grandifolia (Donn. Sm.) I.M. Johnst.	+	150
Pithecellobium diversifolium Benth.	+	50
Plathymenia foliolosa Benth.	+	154

Taxon	Status[1]	Souce[2]
Podalyria burchellii DC.	+	60
Podalyria canescens E. Mey.	+	61
Podalyria cordata R. Br.	+	61
Podalyria velutina Benth.	+	60
Poitea punicea (Urb.) Lavin	+	68
Pongamia pinnata (L.) Pierre	-	108
Prosopis affinis Spreng.	+	56
Prosopis africana (Guille. et al.) Taub.	+	69
Prosopis alba Griseb.	+	69
Prosopis articulata S. Watson	+	69
Prosopis ferox Griseb.	+	6
Prosopis flexuosa DC.	+	6
Prosopis glandulosa Torr. var. *glandulosa*	+	54
Prosopis glandulosa Torr. var. *torreyana* (L.D. Benson) M.C. Johnst.	+	48
Prosopis kuntzei Harms	+	69
Prosopis pallida (Humb. & Bonpl. ex Willd.) Kunth	+	69
Prosopis ruscifolia Griseb.	+	69
Prosopis tamarugo F. Phil.	+	69
Prosopis velutina Wooton	+	54
Psoralea aculeata L.	+	61
Psoralea affinis Eckl. & Zeyh.	+	61
Psoralea alata (Thunb.) T.M. Salter	+	61
Psoralea verrucosa Willd.	+	61
Psorothamnus emoryi (A. Gray) Rydb.	+	48
Psorothamnus schottii (Torr.) Barneby	+	48
Pterocarpus macrocarpus Kurz	+	148
Pterocarpus osun Craib	+	150
Pterocarpus santalinus L. f.	+	143
Pueraria montana (Lour.) Merr. var. *montana*	+	5
Pueraria montana (Lour.) Merr. var. *thomsonii* (Benth.) Wiersema ex D.B. Ward	+	72
Pueraria wallichii DC.	+	76
Pycnospora lutescens (Poir.) Schindl.	+	65
Racosperma oshanesii (F. Muell. & Maiden) Pedley	+	63
Rafnia axillaris Thunb.	+	61
Rafnia capensis (L.) Druce	+	61
Rafnia racemosa Eckl. & Zeyh.	+	61
Recordoxylon speciosum (Benoist) Gazel ex Barneby	+	62
Rhynchosia cunninghamii Benth.	+	24
Rhynchosia harveyi Eckl. & Zeyh.	+	61
Rhynchosia himalensis Benth. ex Baker	+	9
Rhynchosia hirsuta Eckl. & Zeyh.	+	60
Rhynchosia namaensis Schinz	+	60
Rothia indica (L.) Druce	+	16
Samanea inopinata (Harms) Barneby & J.W. Grimes	+	50
Schizolobium parahyba (Vell.) S.F. Macbr.	+	68
Schleinitzia insularum (Guill.) Burkart	+	38
Sclerolobium guianensis Benth.	+	136
Sclerolobium melinonii Harms	+	62
Sclerolobium pilgerianum Harms	+	50
Senna australis (Vell.) H.S. Irwin & Barneby	-	50
Senna aversiflora (Herb.) H.S. Irwin & Barneby	-	50
Senna barclayana (Sweet) Randell var. *barclayana*	+	88
Senna cumingii (Hook. & Arn.) H.S. Irwin & Barneby	-	6
Senna lindheimeriana (Scheele) H.S. Irwin & Barneby	-	6
Senna obtusifolia (L.) H.S. Irwin & Barneby	+	132
Senna septemtrionalis (Viv.) H.S. Irwin & Barneby	+	72
Senna silvestris (Vell.) H.S. Irwin & Barneby ssp. *silvestris* var. *sapindifolia* (Vogel) H.S. Irwin & Barneby	-	50

Taxon	Status[1]	Souce[2]
Senna tora (L.) Roxb.	+	107
Sesbania benthamiana Domin	+	65
Sesbania brachycarpa F. Muell.	+	65
Sesbania emerus (Aubl.) Urb.	+	142
Sesbania erubescens (Benth.) N.T. Burb.	+	65
Sesbania exasperata Kunth	+	51
Sesbania goetzei Harms	+	110
Sesbania leptocarpa DC.	+	49
Sesbania macroptera Micheli	-	6
Sesbania pachycarpa DC.	+	42
Sesbania sesban (L.) Merr. ssp. *punctata* (DC.) J.B. Gillett	+	141
Sesbania sesban (L.) Merr. ssp. *sesban*	+	111
Shuteria densiflora Benth.	+	131
Shuteria involucrata (Wall.) Wight & Arn. var. *involucrata*	-	71
Sindora siamensis Miq. var. *siamensis*	-	50
Sindora tonkinensis K. Larsen & S.S. Larsen	+	72
Smirnowia turkestana Bunge	+	150
Smithia ciliata Royle	+	76
Sophora albescens (Rehder) C.Y. Ma	+	72
Sophora microphylla Aiton	-	6
Sophora mollis (Royle) Baker ssp. *griffithii* (Stocks) Ali	+	9
Sophora tetraptera J.F. Mill.	+	89
Spatholobus harmondii Gagnep.	+	72
Spatholobus parviflorus (Roxb. ex DC.) Kuntze	+	76
Stahlia monosperma (Tul.) Urb.	-	68
Stylosanthes angustifolia Vogel	+	37
Stylosanthes bracteata Vogel	+	34
Stylosanthes calcicola Small	+	37
Stylosanthes debils M.B. Ferreira & Sousa Costa	+	34
Stylosanthes guianensis (Aubl.) Sw. var. *intermedia* (Vogel) Hassl.	+	34
Stylosanthes guianensis (Aubl.) Sw. var. *marginata* Hassl.	+	34
Stylosanthes guianensis (Aubl.) Sw. var. *robusta* 't Mannetje	+	34
Stylosanthes linearifolia M.B. Ferreira & Sousa Costa	+	34
Stylosanthes macrocarpa S.F. Blake	+	37
Stylosanthes macrocephala M.B. Ferreira & Sousa Costa	+	34
Stylosanthes pilosa M.B. Ferreira & Sousa Costa	+	34
Stylosanthes ruellioides Mart. ex Benth.	+	34
Stylosanthes sympodialis Taub.	+	3
Stylosanthes tomentosa M.B. Ferreira & Sousa Costa	+	34
Swainsona calcicola Joy Thomps.	+	167
Swainsona kingii F. Muell.	+	167
Swainsona leeana J.Z. Weber	+	167
Swainsona maccullochiana F. Muell.	+	167
Swainsona oroboides F. Muell.	+	65
Swainsona pterostylis (DC.) Bakh. f.	+	167
Swartzia apetala Raddi	+	50
Swartzia caribaea Griseb.	+	142
Swartzia jenmanii Sandwith	+	150
Swartzia pinnata (Vahl) Willd.	-	108
Swartzia simplex (Sw.) Spreng. var. *ochnaceae* (DC.) R.S. Cowan	+	52
Tachigali aurea Tul.	+	69
Tachigali guianensis (Benth.) Zarruchi & Herend.	-	136
Tachigali melinonii (Harms) Zarucchi & Herend.	+	62
Tachigali paniculata Aubl. var. *alba* (Ducke) Dwyer	+	50
Tachigali rugosa (Mart. ex Benth.) Zarucchi & Pipoly	+	50
Tadehagi triquetrum (L.) H. Ohashi	+	38
Tadehagi triquetrum (L.) H. Ohashi ssp. *pseudotriquetrum* (DC.) H. Ohashi	+	72
Tephrosia apollina (Delile) Link	+	86

Taxon	Status[1]	Souce[2]
Tephrosia baurei Benth. ex A. Gray	+	65
Tephrosia brachyodon Domin	+	65
Tephrosia bracteolata Guill. & Perr.	+	42
Tephrosia capensis (Jacq.) Pers. var. *angustifolia* E. Mey.	+	61
Tephrosia capensis (Jacq.) Pers. var. *capensis*	+	61
Tephrosia cephalantha Baker	+	5
Tephrosia dietrichii Domin	+	65
Tephrosia elongata E. Mey. var. *tzaneenensis* (H.M. Forbes) Brummitt	+	60
Tephrosia filipes Benth.	+	65
Tephrosia flagellaris Domin	+	65
Tephrosia juncea R. Br. ex Benth.	+	38
Tephrosia pallens (Aiton) Pers.	+	61
Tephrosia purpurea (L.) Pers. ssp. *canescens* (E. Mey.) Brummitt	+	61
Tephrosia purpurea (L.) Pers. Var. *maritima* Haines	+	16
Tephrosia rufula Pedley	+	65
Tephrosia supina Domin	+	65
Tephrosia virgata H.M. Forbes	+	61
Tephrosia zoutpansbergensis Bremek.	+	61
Tetraberlinia bifoliata (Harms) Hauman	-	77
Tetraberlinia moreliana Aubr,v.	-	77
Thermopsis barbata Benth.	+	117
Thermopsis lanceolata R. Br.	+	150
Trifolium africanum Ser. var. *africanum*	+	153
Trifolium africanum Ser. var. *glabellum* (E. Mey.) Harv.	+	153
Trifolium amabile Kunth	+	146
Trifolium canescens Willd.	+	146
Trifolium dasyphyllum Torr. & A. Gray	+	19
Trifolium decorum Chiov.	+	55
Trifolium echinatum M. Bieb. Var. *carmeli* (Boiss.) Gibelli & Belli	+	9
Trifolium haydenii Porter	+	5
Trifolium heldreichianum (Gibelli & Belli) Hausskn.	+	146
Trifolium lanceolatum (J.B. Gillett) J.B. Gillett	+	27
Trifolium mattirolianum Chiov.	+	150
Trifolium nanum Torr.	+	92
Trifolium parryi A. Gray	+	92
Trifolium plebeium Boiss.	+	150
Trifolium procumbens L.	+	5
Trifolium quartinianum A. Rich.	+	55
Trifolium scutatum Boiss.	+	150
Trifolium simense Fresen.	+	38
Trigonella cretica (L.) Brot.	-	60
Trigonella glabra Thunb. subsp. *uncata* (Boiss. & Noe) Lassen	+	9
Uraria cylindracea Benth.	+	65
Uraria lagopus DC.	+	76
Uraria lagopus DC. var. *neglecta* (Prain) H. Ohashi	+	76
Uraria rufescens (DC.) Schindl.	+	76
Vandasina retusa (Sol. ex Benth.) Rauschert	+	150
Vatairea heteroptera (Allemao) Ducke	-	50
Vicia amurensis Oett.	+	150
Vicia bungei Ohwai	+	169
Vicia faba L. var. *major* (Harz.) Beck	+	168
Vicia faba L. var. *minuta* (Hort. ex Alef.) Mansf.	+	168
Vicia pseudoorobus Fisch. & C.A. Mey.	+	150
Vicia ramuliflora (Maxim.) Ohwi	+	150
Vicia serratifolia Jacq.	+	146
Vicia sylvatica L.	+	150
Vicia venosa (Willd. ex Link) Maxim.	+	150
Vigna comosa Baker ssp. *comosa*	+	49

Taxon	Status[1]	Souce[2]
Vigna cylindrica (L.) Skeels	+	146
Vigna multinervis Hutch. & Dalziel	+	49
Vigna nakashimae (Ohwi) Ohwi & O. Ohashi	+	123
Vigna oblongifolia A. Rich.	+	38
Vigna radiata (L.) R. Wilczek var. *radiata*	+	5
Vigna unguiculata (L.) Walp. ssp. *unguiculata*	+	39
Wiborgia incurvata E. Mey.	+	61
Wiborgia monoptera E. Mey.	+	60
Zapoteca tetragona (Willd.) H.M. Hern.	-	150
Zenkerella citrina Taub.	-	150
Zornia brasiliensis Vogel	+	38
Zygia inaequalis (Willd.) Pittier	+	50
Zygia juruana (Harms) L. Rico	+	150

[1] Status: +, root nodules reported as present; -, root nodules reported as absent.
[2] Source:

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Leguminous Genera of Unknown Response to Rhizobia

Harold D.L. Corby and Joe.H. Kirkbride, Jr.

These lists of leguminous genera whose response to rhizobia is still unknown are presented to encourage their exploration. They are arranged geographically in the following six tables so that *Bean Bag* Readers may see at a glance the task awaiting them on their doorsteps.

Response has been reported for 493 legume genera comprising more than 17,450 species, leaving 195 genera, comprising some 549 species, still to be explored. One hundred and two genera, 52.6%, are monotypic; 86, 43.9%, have 2–10 species; and six, 3.1%, have 11–20 species. The vast majority is found in tropical areas, and only two genera, *Adenopodia* C. Presl and *Pomaria* Cav., occur in both the New and Old Worlds. *Pomaria* is also the largest genus with approximately 20 species.

The genera, as understood here, are those accepted by the US Department of Agriculture in the Germplasm Resources Information Network [GRIN] (USDA 2001). The tribal classification is that of Polhill (1994a, 1994b), updated to reflect subsequent work (Kirkbride *et al.* 2000; USDA loc. cit.). The number of species per genus are those of Polhill and Raven (1981), updated to accord with those of Kirkbride *et al.* (loc. cit.).

Genera are listed by the mid-latitude of their distribution as given in Polhill and Raven (loc. cit.), updated to accord with Kirkbride *et al.* (loc. cit.). Genera occurring continuously across the equator are listed as *equatorial*, regardless of their extent on either side of it; those occurring on both sides of the equator, but not across it, are listed by the mid-latitudes of their northern and southern distributions.

Nodule Hunting

For those who may be unfamiliar with nodule hunting, it may be said that by far the best method of search is to raise seedlings in coarse sharp sand, with an admixture of soil from the rhizosphere of flourishing plants of the species concerned. Then, when seedlings are at least two months old, or at flowering if that comes sooner, their roots should be washed clean of soil to reveal any nodules present.

Those seeking nodules in the field must, when exploring root-systems too big to be dug out in their entirety, always trace the nodule-bearing roots back to the plant itself—only thus may the nodule be surely related to its supposed parent.

Effective rhizobial nodules (those fixing nitrogen—those being sought) may usually be recognized in being lateral outgrowths of the root with reddish-pink cores. However, these two criteria are not infallible, so specimens of any nodule found should be dried over silica gel for later formal identification; at the same time, specimens of the parent plant should be pressed and dried for the same purpose.

With seemingly non-nodulating species, it is suggested that successive batches of seedlings be raised, using a bacterial inoculum from a different source with each batch, until the tally of flourishing plants without nodules reaches at least 100. And then, and only then, to report that the species has been found to be non-nodulating! Fuller treatment of this subject may be found in Corby (1981, 1988) and Sprent (2001).

Table 1. African genera whose response to rhizobia is unknown and their distribution in Africa.

Genus	Tribe	No. of Species	Distribution
30° or more North			
Argyrocytisus (Maire) Frodin & Heywood ex Raynaud	Genisteae	1	Atlas Mountains
Dorycnopsis Boiss.	Loterae	1	E Mediterranean, N Morocco
Erinacea Adans.	Genisteae	1	NW Africa (and SW Europe)
Spartidium Pomel	Crotalarieae	1	North Africa
10–29° North			
Clitoriopsis R. Wilczek	Phaseoleae	1	Zaire, Sudan
Distemonanthus Benth.	Cassieae	1	West Tropical Africa
Griffonia Baill.	Cercideae	4	West Tropical Africa
Melliniella Harms	Desmodieae	1	West Tropical Africa
10–29° North contd.			
Platycelyphium Harms	Sophoreae	1	E and NE Africa
Talbotiella Baker f.	Detarieae	3	West Africa
Vermifrux J. B. Gillett	Loteae	1	N Ethiopia, Sudan, Eritrea, Yemen

3–9° North			
Airyantha Brummitt	Sophoreae	2	Guinea-Congo forests (and Borneo 1)
Aphanocalyx Oliv.	Detarieae	14	Guinea-Congo forests and Sierra Leone—Liberia—Ivory Coast
Aubrevillea Pellegr.	Mimoseae	2	Guinea-Congo forests
Chidlowia Hoyle	Caesalpinieae	1	Sierra Leone to Ghana
Dicraeopetalum Harms	Sophoreae	3	Kenya, Ethiopia (and Madagascar)
Gilletiodendron Vermoesen	Detarieae	5	Guinea-Congo forests
Haplormosia Harms	Sophoreae	1	Sierra Leone—Gabon
Lebruniodendron J. Léonard	Detarieae	1	Forests of Gulf of Guinea
Leonardoxa Aubrev.	Detarieae	1	Guinea-Congo forests
Oddoniodendron De Wild.	Detarieae	2	Gulf of Guinea forests
Oxystigma Harms	Detarieae	5	Guinea-Congo forests
Pellegriniodendron J. Léonard	Detarieae	1	Guinea-Congo forests
Plagiosiphon Harms	Detarieae	5	Guinea-Congo forests
Polystemonanthus Harms	Detarieae	1	Liberia and Ivory Coast
Stemonocoleus Harms	Detarieae	1	Guinea-Congo forests
Tessmannia Harms	Detarieae	11	Guinea-Congo and East Africa
Equatorial Africa			
Adenopodia C. Presl	Mimoseae	10	Africa 4 (and Central America and Mexico 3, Amazonia 3)
Bikinia Wieringa	Detarieae	10	W central Africa
Bussea Harms	Caesalpinieae	6	Tropical Africa (and Madagascar)
Camoensia Welw. ex Benth. & Hook. f.	Sophoreae	2	Forests of Gulf of Guinea
Eurypetalum Harms	Detarieae	3	Cameroon—Gabon
Fillaeopsis Harms	Mimoseae	1	Nigeria—Zaire—Angola
Nesphostylis Verdc.	Phaseoleae	3	Africa 1 (and India 1, Burma 1)
Normandiodendron J. Léonard	Detarieae	2	Zaire, Gabon, Cabinda
Ostryocarpus Hook. f.	Millettieae	6	Tropical Africa to SE Asia
Pachyelasma Harms	Caesalpinieae	1	Nigeria, Zaire, Gabon, Central African Republic
Paracalyx Ali	Phaseoleae	6	Africa to Asia
Physostigma Balf.	Phaseoleae	4	Tropical Africa
Platysepalum Welw. ex Baker	Millettieae	12	Tropical Africa
Pseudoeriosema Hauman	Phaseoleae	6	Tropical Africa
Pseudoprosopis Harms	Mimoseae	4	Tropical Africa
Schefflerodendron Harms	Millettieae	6	Tropical Africa
Spathionema Taub.	Phaseoleae	1	Tropical E Africa
Stachyothyrsus Harms	Caesalpinieae	3	Sierra Leone—Zaire—Gabon
Vatovaea Chiov.	Phaseoleae	1	Africa
3–9° South			
Augouardia Pellegr.	Detarieae	1	Gabon
Englerodendron Harms	Detarieae	1	Usambara Mountains, Tanzania
Librevillea Hoyle	Detarieae	1	Gabon
Michelsonia Hauman	Detarieae	1	Zaire forests
Neochevalierodendron J. Léonard	Detarieae	1	Gabon
Pseudomacrolobium Hauman	Detarieae	1	Forests of Congo basin
Sindoropsis J. Léonard	Detarieae	1	Gabon
Stuhlmannia Taub.	Caesalpinieae	1	Coastal forests of Tanzania

10–21° South			
Adenolobus (Harv. ex Benth. & Hook. f.) Torre & Hillc.	Cercideae	2	SW Africa
Carrissoa Baker f.	Phaseoleae	1	Angola
Icuria Wieringa	Detarieae	1	Coastal dunes of Mozambique
Rhynchotropis Harms	Indigofereae	2	South central Africa
22° or more South			
Chrysoscias E. Mey.	Phaseoleae	6	South Africa
Polhillia C.H. Stirt.	Genisteae	5	Cape Province, South Africa
Pomaria Cav.	Caesalpinieae	20	South Africa (and SW USA, N Mexico, South America)
Stirtonanthus B.-E. van Wyk & Schutte	Podalyriinae	3	Cape Province, South Africa
Umtiza Sim	Detarieae	1	South Africa

Ed. Note. Molecular data places *Umtiza* within subfamily Caesalpinioideae s.l but excludes it from Detarieae s.l.

Table 2. Madagascan genera whose response to rhizobia is unknown.

Genus	Tribe	No. of Species	Distribution
Alantsilodendron Villiers	Mimoseae	8	
Baudouinia Baill.	Cassieae	4	
Brandzeia Baill.	Detarieae	1	
Brenierea Humbert	Cercideae	1	
Dicraeopetalum Harms	Sophoreae	3	Ethiopia to N Kenya
Disynstemon R. Vig.	Millettieae	1	
Eligmocarpus Capuron	Cassieae	1	
Gagnebina Neck. ex DC.	Mimoseae	2	Comoros, Mauritius, Reunion
Lemurodendron Villiers & P. Guinet	Mimoseae	1	
Lemuropisum H. Perrier	Caesalpinieae	1	
Mendoravia Capuron	Cassieae	1	
Neoapaloxylon Rauschert	Detarieae	2	
Neoharmsia R. Vig.	Sophoreae	2	
Ormocarpopsis R. Vig.	Aeschynomeneae	5	
Peltiera Du Puy & Labat	Aeschynomeneae	2	
Phylloxylon Baill.	Indigofereae	5	
Pongamiopsis R. Vig.	Millettieae	2	
Pyranthus Du Puy & Labat	Millettieae	6	
Sakoanala R. Vig.	Sophoreae	2–3	
Sylvichadsia Du Puy & Labat	Millettieae	4	
Tetrapterocarpon Humbert	Caesalpinieae	1	
Vaughania S. Moore	Indigofereae	11	

Table 3. New World genera whose response to rhizobia is unknown and their distribution in the Americas and Caribbean islands.

Genus	Tribe	No. of Species	Distribution
30° or more North			
Errazurizia Phil.	Amorpheae	4	Arizona, Baja California, Sonora
Kanaloa Lorence & K. R. Wood	Mimoseae	1	Kaho'olawe, Hawaii
Lackeya Fortunato et al.	Phaseoleae	1	SE USA
Peteria A. Gray	Robinieae	4	Mexico, USA

30° or more North contd.			
Pomaria Cav.	Caesalpinieae	20	SW USA, N Mexico (and South America, South Africa)
Rupertia J. W. Grimes	Psoraleeae	3	SW Canada, W USA and N Baja California, Mexico
Sphinctospermum Rose	Robinieae	1	Mexico, USA
20–29° North			
Behaimia Griseb.	Millettieae	1	Cuba
Calliandropsis H. M. Hern. & P. Guinet	Mimoseae	1	Central Mexico
Genistidium I. M. Johnst.	Robinieae	1	Mexico and Texas, USA
Herpyza C. Wright	Phaseoleae	1	Cuba
Hesperothamnus Brandegee	Millettieae	5	Mexico
Painteria Britton & Rose	Ingeae	3	Mexican plateau
Pictetia DC.	Aeschynomeneae	5	Cuba
Pomaria Cav.	Caesalpinieae	20	SW USA, N Mexico (and South America, South Africa)
Prosopidastrum Burkart	Mimoseae	1	Mexico (and Patagonia 1)
10–19° North			
Adenopodia C. Presl	Mimoseae	10	Mexico and Central America 3, Amazonia 3 (and Africa 4)
Apoplanesia C. Presl	Amorpheae	1	Mexico—Venezuela
Arcoa Urb.	Caesalpinieae	1	Santo Domingo
Guinetia L. Rico & M. Sousa	Ingeae	1	Oaxaca, Mexico
Hybosema Harms	Robinieae	2	S Mexico, N Central America
Lennea Klotzsch	Robinieae	5	Central America, Mexico
Myrospermum Jacq.	Sophoreae	2	S Texas, USA to northern South America
Pictetia DC.	Aeschynomeneae	6	West Indies
Pomaria Cav.	Caesalpinieae	20	SW USA, N Mexico (and South America, South Africa)
Prioria Griseb.	Detarieae	1	Panama, Costa Rica, Jamaica, Colombia, Central America
Rhodopis Urb.	Phaseoleae	1	West Indies
Sphinga Barneby & J. W. Grimes	Ingeae	3	S Mexico, N. Guatemala, Cuba, N coastal Colombia and Venezuela
Uribea Dugand & Romero	Sophoreae	1	Costa Rico, Colombia
3–9° North			
Brachycylix (Harms) R. S. Cowan	Detarieae	1	Colombia
Candolleodendron R. S. Cowan	Swartzieae	1	French Guiana, mouth of Amazon
Fissicalyx Benth.	Dalbergieae	1	Venezuela, Guyana, Panama
Margaritolobium Harms	Millettieae	1	Margarita Island, Venezuela
Orphanodendron Barneby & J. W. Grimes	Caesalpinieae	1	Antioquia, Colombia
Spirotropis Tul.	Sophoreae	1	NE South America
Equatorial America			
Adenopodia C. Presl	Mimoseae	10	Mexico and Central America 3, Amazonia 3 (and Africa 4)
Apurimacia Harms	Millettieae	4	Tropical and subtropical South America
Browneopsis Huber	Detarieae	6	Panama, Colombia, Ecuador, Peru
Collaea DC.	Phaseoleae	3	Tropical and subtropical South America
Cymbosema Benth.	Phaseoleae	1	Mexico—Amazonia
Ecuadendron D. A. Neill	Detarieae	1	W Ecuador
Jacqueshuberia Ducke	Caesalpinieae	3	Brazil, Colombia, Venezuela, Peru

Equatorial America contd.			
Muellera L. f.	Millettieae	2	Tropical America
Paloue Aubl.	Detarieae	4	Tropical America
Paloveopsis R. S. Cowan	Detarieae	1	NE South America
Soemmeringia Mart.	Aeschynomeneae	1	Brazil, Venezuela, Bolivia
3–9° South			
Androcalymma Dwyer	Cassieae	1	Amazonia
Uleanthus Harms	Sophoreae	1	Amazon basin
Weberbauerella Ulbr.	Aeschynomeneae	2	Peru
10–29° South			
Blanchetiodendron Barneby & J. W. Grimes	Ingeae	1	NE Brazil
Cascaronia Griseb.	Dalbergieae	1	Bolivia, Argentina
Fiebrigiella Harms	Aeschynomeneae	1	Bolivia, Peru
Leucochloron Barneby & J. W. Grimes	Ingeae	4	E Brazil
Mysanthus G. P. Lewis & A. Delgado	Phaseoleae	1	Bahia, Brazil
Oryxis A. Delgado & G. P. Lewis	Phaseoleae	1	Minas Gerais, Brazil
Panurea Spruce ex Benth. & Hook. f.	Sophoreae	1	Colombia, Brazil
Petaladenium Ducke	Sophoreae	1	Brazil
Piptadeniopsis Burkart	Mimoseae	1	Paraguay
Pomaria Cav. *Pomaria* Cav. contd.	Caesalpinieae	20	South America (and SW USA, N Mexico, South Africa)
Sellocharis Taub.	Genisteae	1	SE Brazil
(*Thylacanthus* Tul.	Detarieae	1	Brazil) see Ed. Note.
30° or more South			
Anarthrophyllum Benth.	Genisteae	15	Chile, Argentina
Pomaria Cav.	Caesalpinieae	20	South America (and SW USA, N Mexico, South Africa)
Prosopidastrum Burkart	Mimoseae	1	Patagonia (and Mexico 1)
Ramorinoa Speg.	Dalbergieae	1	Argentina
Stenodrepanum Harms	Caesalpinieae	1	Argentina, Brazil
Zuccagnia Cav.	Caesalpinieae	1	Argentina, Chile

Ed .Note. *Thylacanthus* Tul. , thought to be a monotypic genus from Brazil based on a single collection is *Julbernardia paniculata* (Benth.) Troupin from Mozambique (Breteler in comm. G.P.Lewis, 1995).

Table 4. Asian and Indo-Pacific island genera whose response to rhizobia is unknown and their distribution in the Asia and the Indo-Pacific islands.

Genus	Tribe	No. of Species	Distribution
40° or more North			
Ammodendron Fisch. ex DC.	Sophoreae	6	Central Asia
Eversmannia Bunge	Hedysareae	1	Caspian Sea to Tien Shan
Paracalyx Ali	Phaseoleae	6	Asia (and Africa)
30–39° North			
Craspedolobium Harms	Millettieae	1	W China
Diphyllarium Gagnep.	Phaseoleae	1	Indochina, Indonesia, Philippines
Oreophysa (Bunge ex Boiss.) Bornm.	Galegeae	1	Mountains of N Iran
Salweenia Baker f.	Sophoreae	1	Tibet
Sarcodum Lour.	Millettieae	2	SE Asia, Japan (Solomon Is. 1, Phillipines,1)

30–39° North contd.			
Sinodolichos Verdc.	Phaseoleae	2	China and Burma
Spongiocarpella Yakovlev & N. Ulziykh.	Galegeae	9	Central China, foothills of the Himalayas, Mongolia
Stracheya Benth.	Hedysareae	1	N India, Nepal, Bhutan, SW China
3–29° North			
Afgekia Craib	Millettieae	3	S China, Burma, Thailand
Airyantha Brummitt	Sophoreae	1	Borneo (and Africa)
Antheroporum Gagnep.	Millettieae	2	Thailand, Indochina, S China
Burkilliodendron Sastry	Millettieae	1	Perak, Malaysia
Cochlianthus Benth.	Phaseoleae	2	Himalayas, SW China
Cruddasia Prain	Phaseoleae	1	Burma, Thailand, S China
Desmodiastrum (Prain) A. Pramanik & Thoth.	Desmodieae	2	S India, Indochina, E Java
Eleiotis DC.	Desmodieae	2	India
Endertia Steenis & de Wit	Detarieae	1	Borneo
Endosamara R. Geesink	Millettieae	1–2	S India to Philippines
Luzonia Elmer	Phaseoleae	1	Philippines, Indonesia
Nesphostylis Verdc.	Phaseoleae	3	India 1, Burma 1 (and Africa 1)
Nogra Merr.	Phaseoleae	3	India, Thailand, China
Ostryocarpus Hook. f.	Millettieae	6	Tropical Africa to SE Asia
Pseudosindora Symington	Detarieae	1	Borneo, Sarawak
Spongiocarpella Yakovlev & N. Ulziykh.	Galegeae	9	Central China, foothills of the Himalayas, Mongolia
Storckiella Seem.	Cassieae	3	New Caledonia and Fiji
Stracheya Benth.	Hedysareae	1	N India, Nepal, Bhutan, SW China
Equatorial Asia			
Fordia Hemsl.	Millettieae	10	Continental SE Asia, Sumatra, Borneo
Kingiodendron Harms	Detarieae	6	India, East Indies
Kunstleria Prain	Millettieae	7	Malaya, Borneo, Sumatra, Philippines, New Guinea, S India
Leucostegane Prain	Detarieae	2	Malaya, Sarawak
Macropsychanthus Harms ex K. Schum. & Lauterb.	Phaseoleae	4	Philippines, New Guinea, Micronesia
Mecopus Benn.	Desmodieae	1	India to S China and Malayan Islands
Neocollettia Hemsl.	Desmodieae	1	Burma, Java
Serianthes Benth.	Ingeae	10	Malay peninsula and archipelago
Sympetalandra Stapf	Caesalpinieae	5	East Indies
Trifidacanthus Merr.	Desmodieae	2	Vietnam, Hainan, Philippines, Lesser Sunda Islands
3° or more South			
Arthroclianthus Baill.	Desmodieae	10	New Caledonia
Desmodiastrum (Prain) A. Pramanik & Thoth.	Desmodieae	2	S India, E Java
Kalappia Kosterm.	Cassieae	1	Celebes
Nephrodesmus Schindl.	Desmodieae	6	New Caledonia
Sarcodum Lour.	Millettieae	2	Solomon Islands 1, Philippines 1 (and SE Asia and Japan)
Storckiella Seem.	Cassieae	3	New Caledonia, Fiji

Table 5. Australian genera whose response to rhizobia is unknown and their distribution in Australia.

Genus	Tribe	No. of Species	Distribution
Aenictophyton A. T. Lee	Bossiaeeae	1	Northern Terr. and Western Australia
Austrodolichos Verdc.	Phaseoleae	1	Australia
Austrosteenisia R. Geesink	Millettieae	4	E coastal Australia
Jansonia Kippist	Mirbelieae	1	SW Western Australia
Labichea Gaudich. ex DC.	Cassieae	9	Australia
Pararchidendron I. C. Nielsen	Ingeae	2	Australia (and Asia)
Phylacium Benn.	Desmodieae	2	N Queensland (and Asia)
Plagiocarpus Benth.	Bossiaeeae	1	N Australia
Ptychosema Benth. ex Lindl.	Bossiaeeae	2	Central and Western Australia
Streblorrhiza Endl.	Carmichaelieae	1	Philip Island
Urodon Turcz.	Mirbelieae	1–3	SW Australia

Table 6. European and Mediterranean genera whose response to rhizobia is unknown and their distribution in Europe and Mediterranean basin.

Genus	Tribe	No. of Species	Distribution
Cytisopsis Jaub. & Spach	Loteae	2	E Mediterranean and North Africa
Dorycnopsis Boiss.	Loteae	1	E Mediterranean, N Morocco
Echinospartum (Spach) Fourr.	Genisteae	3	SW Europe
Erinacea Adans.	Genisteae	1	SW Europe and NW Africa
Gonocytisus Spach	Genisteae	3	E Mediterranean
Hammatolobium Fenzl	Loteae	2	Mediterranean basin
Podocytisus Boiss. & Heldr.	Genisteae	1	Balkan peninsula, W Turkey
Sartoria Boiss. & Heldr.	Hedysareae	1	S Turkey

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GLEANINGS

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ALBUQUERQUE is studying medicinal legumes, *Zornia reticulata* Smith, *Mimosa pudica* L. and *Copaifera spp.* and would like any information about these (and other) tropical legumes used in popular medicine. Offers information about tropical legumes of Amazonia – José Maria de Albuquerque, Caixa Postal 716, 66.017-970-Belém-Pará, Brasil.

ARAMBARRI A.M., Stenglein, S.A., Colares, M.N., Novoa, M.C. and Vizcaino, C.E. are working on "Leaf epidermal characteristics in Old and New World species of *Lotus* (Fabaceae: Loteae)". Their purpose is to discover diagnostic characters for future studies.

BEYRA-MATOS continues working on tribe Phaseoleae and defended her PhD thesis on *Pictetia* (PhD thesis) in November 2000 at Havana University, which was approved by the tribunal of scientific grade at Havana University.

CACCAVARI is undertaking a pollen study of American genera of the Piptadenia Group: *Adenopodia, Stryphnodendron, Mimosa, Piptadeniopsis, Microlobius, Piptadenia, Pseudopiptadenia* and *Parapiptadenia.* Flora palinologica del Nordeste Argentino. Needs pollen material of species of the different American taxa of the Piptadenia Group and offers pollen slides of Mimosoideae of Argentina.

FORERO has been up-dating the Mimosoideae in COL (National Herbarium of Colombia) based on monographs by Barneby & Grimes and by Pennington. Studies on the Mimosoideae of Colombia are underway.

HIRSCH is working on genetics of sweet clover (*Melilotus albus* Medikus) and needs Rhizobium inocula for *Gleditsia.* She offers *M. albus* mutants.

KIAM is working on nodulation of legumes in Cameroonian forest zone. Needs lab material for the study of root nodule or any information on nodulation of legumes and offers seed of some Cameroonian legumes such as *Pterocarpus* and *Erythrophleum.*

PAVLOVA needs legume research material of *Bauhinia* L.: *B. aculeata* L., *B. acuminata* L., *B. cumanensis* H.B.K., *B. diphylla* Ham., *B. galpinii* Br., *B. hookeri* Muell., *B. jumanensis* Fr., *B. monandra* Kurz., *B. purpurea* L., *B. racemosa* Lam., *B. rufescens* Lam. and especially materail of *B. tomentosa* L., *B. variegata* L. *For each species* 20–30 seeds and/or a few coloured photographs of the plants in flower are needed.

PIERGIOVANNI with Nenno is maintaining a germplasm database on Italian landraces of *Phaseolus vulgaris* L which is available on http://www.ba.cnr.it/~germap14/ilcb/. They offer and need seed material of the same.

PISTRICK needs land races and old varieties of cultivated legumes and its wild relatives. Offers legumes from the Gatersleben genebank (cp. Index seminum). http://fax-serve.ipk-gatersleben.de

PLANCHUELO is Director of a new Economic Botany project that combines studies in seed anatomy and morphology of crop legumes with taxonomic studies of wild species. Needs Herbarium specimens of *Lupinus* and *Crotalaria* and offers Herbarium specimens of legumes from Central Argentina.

ROBILLARD offers legume publications The list of titles is available from Library-res@em.agr.ca.

SARAVANAKUMAR is working on comparative studies of proteins, chromosome and DNA of some populations of *Vigna* spp. Needs material of grain legumes and its wild relatives and information concerning genetics and conservation of grain legumes and its wild relatives. Offering wild relatives of grain legumes literature/seeds such as *Vigna* and *Cajanus.*

TUCKER is working on comparative floral ontogeny of Swartzieae and needs young floral inflorescences and buds of Swartzia, other taxa in Swartzieae. Offers reprints of publications on floral development in various legumes.

VANDERBORGHT is maintaining a *Phaseoleae – Phaseolinae* collections chiefly centred on wild *Phaseolus* and *Vigna* species. Offers and needs seed material of the same. List of the taxa included in the collection is available on http://www.bn.fgov.be/research/collections/living/...../phaseolus/index.html.

VAN DER MAESEN is working on Leguminoseae of Benin for the project Flora of Benin (1997-2002). Needs *Flemingia*, Cajaninae and *Millettia* from Africa. Offers duplicates from Benin.

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